

SOUTHERN TEXTILE BULLETIN

VOLUME XXII

CHARLOTTE, N. C., THURSDAY, DECEMBER 1, 1921.

NUMBER 14

Hosiery Shippers: For Strength and Economy Use Fibre

Use this Case to Save on Freight

Its light weight makes it more economical than wooden boxes—and it enables you to cut down substantially on freight costs.

Get a Line on Prices

Ask for quotations and complete information on Andrews Solid Fibre Containers and judge for yourself their many advantages. A letter to us today will pay you big tomorrow. Write!

Fibre is stronger and safer than wood, is cheaper in first cost and costs less to ship. Fibre, too, is just as easy a case to pack.

And with no danger of injury to the hands, fibre cases are more quickly handled than wood. That means faster shipments.

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Made of high grade, shock-resisting material that seals tight and stays tight. Their smooth, even surface makes hooks unnecessary and insures careful handling all along the line. Damage, losses en route and resulting claims are reduced to the barest minimum. Accurately scored and slotted—always true in shape and dimensions.

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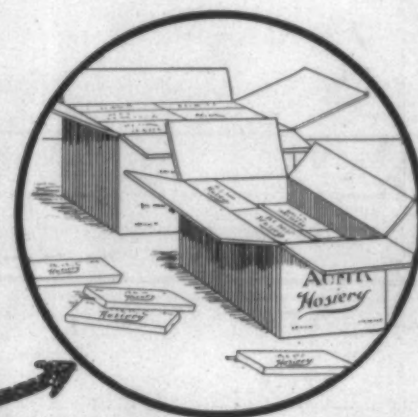
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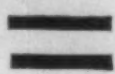
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Five Men and a Hand-Truck



equal



One Man and a Yale Spur-Gear Chain Block on a beam trolley.



AND the one man with the Yale equipment will perform the same work in the Safest Way, take up less working space, and do it quicker.

The Yale Spur-Gear Block is the *safest*, *speediest*, portable hand hoist.

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The new Yale catalog shows you many ways to save money and increase production in your plant by using Yale Chain Blocks and Electric Hoists.

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Textile Mill Supply Co.

INCORPORATED 1898

CHARLOTTE, N. C.

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Concentrated Ash Textile Soda K.B. Special Ash Detergent

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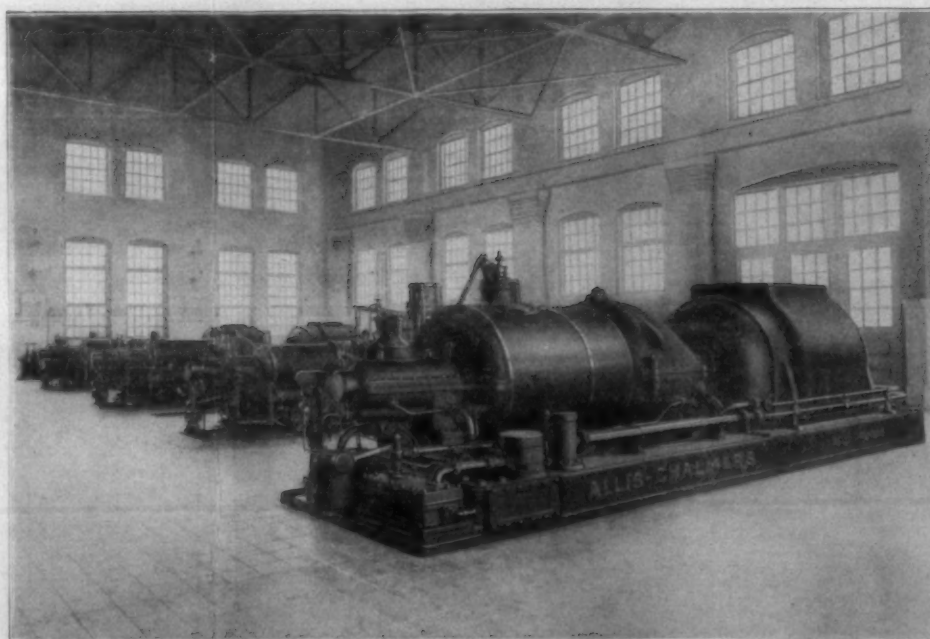
Everything In Mill and Factory Supplies

STEAM TURBINES for TEXTILE MILLS

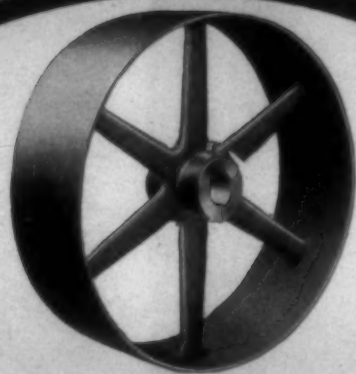
The Allis-Chalmers Steam Turbine has earned an enviable reputation for efficiency and reliability, and the fact that a large proportion of our output is for customers already using our equipment indicates the operator's confidence in our apparatus.

Many Southern and New England Textile Mills are equipped with Allis-Chalmers Steam Turbines, exclusively, additional units having been purchased from time to time as power requirements increased.

Send for Bulletin No. 139-A on Textile Mill Equipment.



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To have continued to successfully
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A special line for COTTON
MILLS.

May we be permitted to figure on
your Transmission requirements?

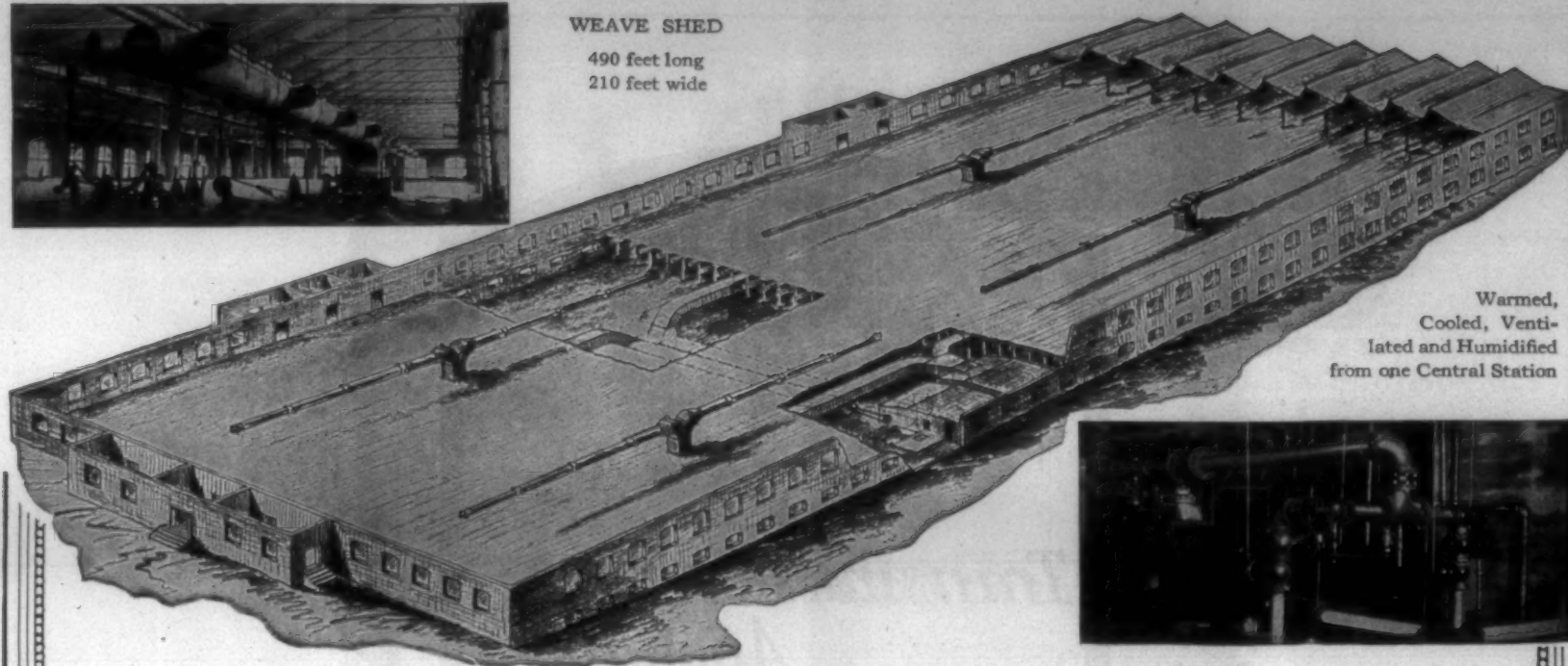
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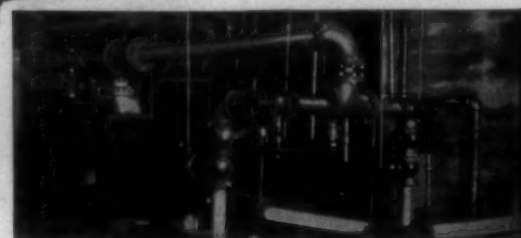


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490 feet long
210 feet wide



Warmed,
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from one Central Station



Heating, Ventilating and Humidifying by Central Station

We remember the heating business when the customer told the contractor how many and what size pipes he wanted.

He doesn't do that now.

The humidifying business has passed through the same phase. With little classified in the way of data, one man's guess was as good as another's.

Now the approach to an industrial heating and humidifying problem (ventilating and cooling if you wish), is an engineering study. Data is available and classified. What was a guess is now a science.

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Central station heating, ventilating and humidifying calls for highly specialized apparatus, skillful engineering—and craftsmanship of the highest order.

This type of equipment costs a lot of money—more than some would consider desirable to spend. But as in one case, 2.7 yards of cloth per loom per day added to production is looked upon by the owners as a very satisfactory return on central station heating and humidifying equipment.

Send for bulletin No. 322



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THE FIBRE MILL EQUIPMENT THAT LASTS

Not How Cheap—but how Lasting

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Leatheroid Fibre Mill Equipment has made a reputation for itself on good service and good appearance—cleanness and smoothness—light weight and great strength.

Try a few Leatheroid cans, cars or boxes in your mill. Notice how everybody likes them, and the remarkable service they give.

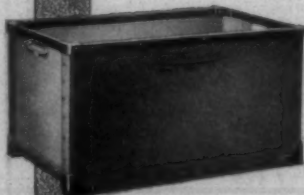
Sold by Leading Southern Mill Supply Houses.

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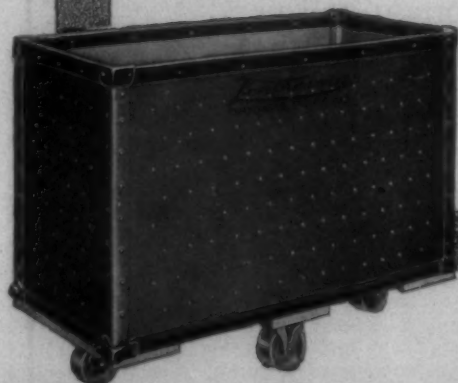
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Leatheroid Factory Barrel, Light durable. Steel top and bottom rims, 4-inch kicking band. Regular size 20x30. Other sizes 16x26, 18x28, 24x36, 24x40.



Leatheroid Mill Box. The standard box for mills and factories. Unusually strong; careful construction throughout; steel-over-wood top rim, protecting corner angles; made in 1, 2, 3, 4, and 5 bushel sizes.



Leatheroid Steel Clad Car. Four inside smooth walls of heavy Leatheroid fibre; outside covered with light steel closely riveted; steel-over-wood top rim; self-oiling wheels.

Leatheroid Roving Can. Smooth as glass—tough as horn; no seams to open up; rolled over top.



Leatheroid Warehouse Car. Made of heavy fibre with steel-over-wood top rim. Patented ribbed steel bottom band—the only construction in which the body of the car is actually riveted to the wood bottom at the four corners; self-oiling wheels.

Combination Doffing Car. Has Fixed and Loose Box; all fibre boxes or steel and fibre boxes. Extra steel reinforcing at all wear points; platform has 1/4" steel frame; self-oiling wheels.





Paint Them Out!

A *good* White Paint on the walls and ceilings of your mill will help to defeat the five "enemies of profit" listed above.

The elimination of any *one* of the five would more than pay for the cost of painting. The reduction of *all* of them effected by painting results in a much greater saving. A *good* white paint such as



means more light—accuracy—better and more work—less accidents—no eyestrain—and more profits.

It intensifies every available ray of daylight in your shop and puts it to work speeding up production—for the better a man sees, the better he works. And superintendents of factories we have made bright, tell us that all their workers are better satisfied—stick to their jobs. Manufacturers must depend more and more on women workers. They will not work in dingy rooms, but flock to factories modernized and bright with CHAFFEE'S MILL WHITE.

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SOUTHERN TEXTILE BULLETIN

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VOLUME XXII

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Better Outlook For Cotton Mills

Hunter Marshall, Jr., secretary and treasurer of the Cotton Manufacturing Association of North Carolina, preliminary to the meeting of the association in Pinehurst next week, issued the following statement in which he reviews textile conditions in North Carolina during this year:

"This year which has just closed has been one of uncertainties and varied conditions," declares Mr. Marshall in his resume. "The cotton manufacturers were among the first to suffer as the result of the business depression which began more than a year ago. For many months practically all of the mills operated on short time, many of them closing down altogether for a considerable period. The majority of those which continued to operate did so without hope of profit but merely to take care of their employees and to maintain their organization. Manufactured goods were stored in warehouses, the mills taking a chance on the market.

Wage Adjustments.

"As a result of the heavy decline in the prices of manufactured products the mills were compelled to reduce wages. The wage reductions in North Carolina have ranged from 30 to 50 per cent, the average probably being 37 or 38 per cent. Wages being paid at present, however, will average more than 100 per cent higher than the wages paid for the same class of work in 1914. The cost of living to cotton mill workers today is 50 per cent less than it was at the peak of prices and is pretty close to what it was in 1914. This means that the cotton mill worker today is enabled to maintain a much higher standard of living and to enjoy more of the comforts and luxuries of life or to save more money than he was able to before the war.

"There is apparently no disposition on the part of the mills in the State to further reduce wages. In fact the manufacturers are anxious to maintain wages at as high a figure as possible in order to develop and keep the most efficient organizations possible.

"The year has been marked by a cordial relationship between manufacturers and operatives, except in a few instances. The exception was the strike at Charlotte, Concord and Kannapolis, which was brought about by labor agitators from the outside through deception and misrepresentations. After a period of approximately 10 weeks during

which there was considerable suffering and misery the operatives returned to work after having lost approximately \$2,000,000 in wages and with nothing gained. This incident put the workers to thinking and it is not likely that hereafter outsiders will figure very largely between the workers in the industry and their employers, whose interests after all are identical.

"The operatives generally have understood the necessity for wage reductions. They have seen the price of most commodities, including the products of their own hands, decline to an even greater extent than their wages were reduced and they realized of course that no one could escape the adjustment through which the whole country has been passing.

"The cotton mill worker in the average mill community of North Carolina is fortunately situated, given that degree of unemployment which existed during the summer has disappeared and, while 5,000,000 workers are unemployed in other industries and in other sections, there is practically no industrious mill worker in North Carolina who is without a job. When there was unemployment, even in the exceptional case of the strike, workers were living in comfortable homes at a purely nominal rental, the rent averaging not more than 25 cents per week per room as compared with four times that figure for similar houses outside of mill communities. The rental in practically all instances included also electric lights, water, garbage disposal, and garden spaces. In this matter the cotton mill workers of this section enjoy a very decided advantage over their fellow workers in Northern mills, where no houses are furnished and the workers must pay whatever rents tenement owners charge and in addition of course have to pay for their lights, water, etc.

"The intelligent cotton mill operative in North Carolina appreciates his opportunity and the conditions under which he works. He knows that his industry is in the midst of a period of large development and that the opportunities for advancement are unusual. He knows cotton mill executives who have worked up from the ranks. He has seen the fruits of individual industry, intelligence and loyalty, and he appreciates the interest and friendship of his employer.

"North Carolina today stands at the head of her sister States of the South in the manufacture of cotton goods. It has first rank in number of mills, number spindles, number employees, in capital invested and in the value of the annual output. More than half the spindles being installed in the South this year are being placed in North Carolina factories. The same ratio will hold good with new knitting machines.

"There are now 513 textile mills in the State, compared with 180 in South Carolina and 173 in Georgia.

"North Carolina has more mills that dye and finish their own product than any other Southern State.

"The largest towel mills in the world are located at Kannapolis; the largest denim mills in the United States are located at Greensboro; the largest damask mills in the United States are located at Roanoke Rapids, and Winston-Salem has the largest underwear factory in America.

Future Development.

"The future development of the industry in this section depends not only upon the enterprise, resource-

fulness and success of cotton mill owners and investors, but to an equally large degree upon the spirit, the efforts, the loyalty and the efficiency of the operatives in our mills.

"If the industry continues to develop, as all signs indicate it will, this development will redound to the benefit of workers and owners alike. It will mean greater opportunities for both. It will mean greater opportunities for merchants and other business men who are dependent more or less upon mill communities for a large part of their business. It will mean greater prosperity for our people in general, because it will add to the general wealth of the State through investments, through larger payrolls and an increased purchasing power. It will mean more taxes for schools, roads, etc.

"The future development of the industry in North Carolina, then, depends upon the combined efforts and enterprise and the combined desire of operators and operatives. It also depends to a very considerable extent upon the attitude of the people generally toward the industry."

Resumption of Mill Building Expected.

Such a period of development in the textile industry in this section as has never before been seen is predicted by industrial leaders as a result of the prospect of a large quantity of new power through the two new developments, which were announced a few days ago by the Southern Power Company, says the Charlotte News.

Those who are most familiar with the textile industry declare that the resumption of the Southern Power Company construction program comes at a most auspicious time. Existing cotton mills are getting upon their feet again following the long period of depression and the future looks brighter than it has for many months. On account of the easier situation in the money market, and, with labor and material costs more nearly normal than they have been for the past few years, an immediate resumption of the development of the textile industry is looked for.

It is freely predicted that the greatest development of the textile industry in America will hereafter be centered in the Piedmont section of the Carolinas. In fact the great-

est development section of North Carolina.

For instance, 72 per cent of the spindles installed in the South during the past three years have been in Piedmont Carolinas and more than 50 per cent in Piedmont North Carolina. Since 1907 the South as a whole has added 5,600,000 spindles as against an increase of 2,750,000 in the North, an increase for the South of approximately 40 per cent, as compared with an increase of 14 per cent for New England.

Center of Industry.

The two Carolinas have more than 10,000,000 of the 15,100,000 spindles in the South, and of this 10,000,000 more than half are operated with electric power secured from the Southern Power Company. This indicates the influence hydro-electric development has had upon the development of the textile industry.

It is interesting to note that of the 1,089,290 spindles installed in the South during the past two years, 529,432 were installed in North Carolina. Of the 631,046 spindles that have been purchased for installation during the present year and 1922, 408,730 were purchased by North Carolina mills. These figures reveal the growing importance of (Continued on Page 23.)

Picking Cotton Electrically

(From News Service Department,
General Electric Company)

The cotton industry, in which human labor has played the important role for the 4,000 or more years that cotton has been picked by hand, promises to become revolutionized by the advent of an electrically operated picker, which has recently been perfected and placed in practical operation on a plantation at Little Rock, Ark., in the heart of the northern cotton belt.

This new electric device makes it possible for a person to gather from 400 to 700 pounds of cotton a day, as compared with 70 to 150 by hand. And by so doing it promises to solve the greatest problem of the cotton grower, that of being able to harvest all the cotton he plants and to do so during the limited period in the fall before the rains and frosts damage the plants and greatly lessen the value of the crop.

It seems odd, yet is a fact, that any cotton grower can raise about three times as much cotton as his hired help can pick. Unlike the harvest of corn, wheat and other crops, where a machine cuts down the stalks and makes but one trip over the field for a harvest, there are three distinct crops to the cotton plant. This means a harvest period of two months or more. The new device eliminates the floating labor element and makes each plantation owner entirely dependent upon his own help to pick cotton. Outsiders cannot be interested in the old method, because of the slow and tedious nature of the work which brings such small returns and has always been the task of the negro.

This is but one feature of this twentieth century picker. Other points in its favor are:

1. It will result in cotton being picked when ripe, thus improving the grade two or three times and adding \$10 or more to the value of a bale. By hand, but half the cotton of the South is being picked on time before it has deteriorated in value because of weather elements.

2. Living conditions of the pickers will be greatly improved by adoption of the electric picker. It will no longer be necessary for women and children to help in the fields. It will be purely a man's job and the women will be able to give greater attention to their homes and if they seek outside work can devote part of their time to raising vegetables and other produce.

3. It now takes 1,600 pounds of seed cotton to make a 500-pound bale of cotton lint, that is, cotton after the seeds and dirt are removed at the gin. With the electric picker, results have shown that 1,450 pounds of seed cotton will make the same 500-pound bale of lint. This is possible because the electric picker does not pick up as much dirt and other trash as the hand picker in removing the cotton from the bolls.

This latest attempt to replace hand-picking may be called the life

work of L. C. Stuckenberg, of Memphis, Tenn., who has been reared on cotton plantations and has devoted many years to studying various plans to economize the picking by use of some portable machine. He admits that he received his real inspiration leading up to the perfection of the present machine, when watching a cow which had broken down the gates and wandered into his cotton fields. Cows will eat cotton for the seeds embedded in the fiber and as this cow went from plant to plant, he noticed the ease with which the cotton was removed from the bolls by the animal's rough tongue.

After experiments extending over fourteen years, he perfected two revolving brushes encased in a small metal frame about the size of a man's double fists. The brushes were made to revolve inwardly or toward one another, thus creating a comb-like movement and when these were placed against the cotton, pulled it free from the bolls without collecting any part of the boll or leaves of the plant. Then, having solved this plan for removing the cotton, he adopted the much-tried suction idea for carrying the cotton to the receptacle which was to receive it. A flexible tube connecting with a bag on the machine did the trick.

Each machine carries a complete electric power plant. The tractor engine furnishes sufficient electric power to operate the eight motors required to run the machine. The brushes in the leads are driven by a flexible drive shaft about three feet long, which is connected to a small motor suspended about halfway down the suction tube. The four picker motors driving the revolving brushes are rated at 1/50th horsepower, 5,000 r. p. m., 110 volts. After the cotton completes its trip through the tube and just before it drops into the bag, it is given a thorough cleaning by fanning, another motor operating a blower as well as providing the suction power. The blower motors are 1/5 horsepower, 5,000 r. p. m., 110 volts. The generator is a 1 1/2 kva., 2,700 r. p. m., 110 volt, three-phase, 90-cycle, self-excited alternator equipped with a small control panel.

There are four picking tubes to a machine. Supported overhead by a balance arrangement, the pickers are suspended with such lightness and flexibility that even a child could shift them about with ease. The machine as it passes through the field can pick eight rows. The negro, and several have been tried on the machine, finds no trouble in using it and in checking up his work it has been found that where he formerly picked 100 pounds by hand, he has been picking 400 pounds by machine with only a few days' training.

Cotton carefully picked as soon as ripe by the electric picker is smooth and even. When picked by hand it goes to the gin in matted lumps and

in ginning many of the fibers become "gin cut." Pieces of cut seeds are left in the bales. Each of these defects lowers the grade and the price. These bad qualities increase steadily the longer cotton is left unpicked after it is ripe.

"But the cotton grower who uses the new electric picker can pick all his crop as fast as the cotton becomes ripe, securing the color that is required to make the better grades," said H. M. Cottrell, of the Cotton Picker Company, at Arkansas, who is closely watching the demonstration machine at Little Rock. "This machine picks the cotton free from leaves, burrs, trash, sand and dirt, making it meet fully the requirements for the highest grades from the standpoint of cleanliness."

"The cotton grower who picks his crop with the electric picker avoids all these losses and can market every pound with a grade of good middling or better," said Mr. Cottrell. "He can pick all his cotton as soon

Research and Its Application to the Mill.

When the term research is spoken of we usually think of something very complicated and something remote from the routine work which we grind out every day. There is a perfectly natural tendency for the average person, whenever a new subject is mentioned, at once to picture to himself all kinds of obscure and difficult things, and it is very seldom that he thinks of it as in any way connected with the things that are always directly before him, says E. D. Walen in "Builders," the magazine of Lockwood, Greene & Co.

One of the basic principles of research, and one which is absolutely essential, is exact knowledge of what is happening. This sounds simple, but the great bulk of research is nothing more than the observing and recording of things which happen under varied conditions, and the compilation of these observations in terms which may be easily understood.

Much valuable research work could be done in any kind of business if those concerned could only grasp the full significance of the term and attempt to apply it to their every day work. This is all the more true in cotton mills, where there are so many different processes and so many variations in stock and product. It has been remarked that nine-tenths of the difficulties experienced in mills, and, indeed, in many other forms of business, arise from failure to know exactly what is happening. This, at first, sounds severe, but it is not very far from the truth. If this fundamental conception of research could be applied to the fullest extent, what might not be accomplished? Unconsciously, we all try to apply it, and we are all more or less successful, as the case may be.

How can research be applied to the mill? First, the superintend-

as it ripens and while it is white. His cotton does not lose in weight from weathering while unpicked. His cotton is picked clean and gins to make a good grade. Under the average conditions through the cotton belt, one-third of the cotton is picked clean and brings as much money as the other two-thirds of the crop that, from delayed picking, is damaged in color and dirty. The Stuckenberg picker can prevent this loss when in general use and every year will add one-third to the total value of the entire cotton crop of the United States."

On the demonstrating machine, as described above, the pickers attached to an Indiana tractor, which has been selected by the Cotton Picker Company of America, the corporation holding the patent rights, as well suited for use in the cotton fields. The electrical equipment including eight motors, a generator and panel board to a machine, were supplied by the General Electric Company.

ents and overseers should make sure that they know exactly what each machine is doing, how it is set, and what its mechanical condition is. Undoubtedly many, if not all, feel that they already are sure of these things; but here it is well to remember that the man never lived who did not make mistakes. Next, a thorough knowledge should be had of the way in which the fixers and section hands adjust their machines—not the way they are supposed to adjust them, but the way they actually do. In general, a fixer is hired because he has fixed a particular type of machine before, and there the matter stops. If overseers always would take the trouble to educate their fixers and section hands to fix machines in the way that is suited to their particular work and system of organization, they could feel reasonably assured that the work was being done in the best possible manner.

Most of us, mill men included, are interested in research, and nearly all of us look toward the unusual and the difficult in order to obtain the benefits of research. Usually we have in mind only the radical results of research, such as the invention or development of the nitrogen lamp, steam turbine, and things of that character. We would do well to consider the things entering into our own every day work, to determine accurately from day to day how our machines are set and follow the production from the bale to the yarn in ways best calculated to locate the causes of poor work, if such is experienced.

If this is done conscientiously, together with the training of our fixers and machine setters, we shall have accomplished the greatest step forward—we shall have so prepared the tremendously large field of industrial research that we can then go into the deeper functions of research with every prospect of success.



National Sulfindone Blue B Conc.

An Indigo Shade Sulphur Color

THE National submits this new product, yielding indigo shades, as superior to any dye of its class that has ever been offered in this market.

Your inquiries as to its exceptional properties are invited.

National Aniline and Chemical Co., Inc.

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NATIONAL DYES

PROTECTION

Cotton "Hedging" is Cotton Insurance

Never in the history of Future Exchanges has their usefulness and necessity been more clearly demonstrated than during the recent period of deflation. They continue to function despite adverse conditions, thereby furnishing and maintaining a uniform price for the commodities in which they deal. Without the Exchanges at such a time, economic chaos would have resulted.

Cotton Exchanges in particular are performing useful service in establishing a uniform price for cotton and, although values are at present considerably below their intrinsic worth, it is infinitely better than the unequal range of prices which ruled in the fall of 1914 when the Cotton Exchanges were closed for approximately three months, causing a semi-panicky condition to prevail.

During that particular period Spot Cotton in numerous instances brought a higher price in the interior than at ports, and there was as much as four to five cents difference in price ranges in the same localities. This condition would not have existed had the Cotton Exchanges been open. Immediately upon the re-opening of the Exchanges a uniform price was established.

We strongly advise that advantage should be taken of the opportunities offered by the American Cotton & Grain Exchange under present economic conditions. A close scrutiny of the factors effecting the price of cotton, which are temporary and superficial, prompts us to suggest the selling of Spot Cotton and buying Futures or, as an alternative, holding Spot Cotton and Selling Futures. This, in our judgment, affords a splendid price insurance to the holders of Spots.

The American Cotton and Grain Exchange has demonstrated its worth and usefulness to the cotton trade and by trading in units of ten bales and multiples thereof, it makes a particular appeal to the small trader in the hedging of his Spots. The larger operator also finds that the "American" offers great advantages as it gives him the opportunity in an economical and safe way to protect his purchases and sales in approximately the same quantities as his Spot commitments.

Market Letters mailed free upon request, references cheerfully furnished, and all inquiries will be promptly and courteously answered.

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Written exclusively for Southern Textile Bulletin by "Old Fixer", a man who has had long & varied experience in this work

Construction of Backed Cloths.

A loom fixer in order to qualify to fill the position of an overseer of a weave room in a cotton mill should be familiar with the construction of backed and double cloths. His mill may be employed in the weaving of drills, prints, ducks, osnaburgs or other line of cotton goods, but an order may be received at any time to design and manufacture backed or double cloths. Backed and double cloths differ materially from plain or single cloths in the details of their composition. The plain or the single weave is constructed with one system of warp and one system of filling. The backed and the double cloths contain either two systems of warps or two systems of filling or both. The additional warp or filling is what forms the backing and hence we get the backed cloth. The backed cloth is in reality a single cloth on which a backing of warp or filling has been woven. Backed fabrics are not the same as double fabrics, although both are in the same class. The double texture will be explained in another installment of this series. This installment will be devoted to the backed cloth. The backed fabric is useful for several grades of goods. If it is desired to weave a cloth of a very fine warp and filling yarn so as to present a closeness of texture and fineness of feel on the face of the goods, and at the same time have weight and strength in the cloth, then the face can be woven with the fine yarns and stability and weight obtained by adding a heavy backing. This backing overcomes any flimsiness that might result from using fine threads for the face.

Weaving With Two Systems of Warp and One of Filling.

A backed cloth is one in which there is the usual single texture but on which there is another texture woven in the form of a backing by means of either additional warp or filling threads. A fabric thus woven is not a double texture. The double cloths are distinct from the division of fabrics under consideration. The double cloth consists of two separate systems of both warp and filling, woven with the idea of increasing the weight of the goods or for making two thicknesses either joined together by stitches at intervals or entirely separated. But the fabric which is woven on the plan of using either two systems of warp and one system of filling or two systems of filling and one of warp, is created with a view of offering an opportunity to add strength, firmness, elasticity and weight to goods in which the face filling or the face warp or both are too fine to make substantial goods. In cases in which it is desired to weave a very fine face on the goods and fine yarns are required, the resulting lack of strength is overcome by the addition of a backing. The scheme of the drafting of designs of this na-

ture is shown in Figure 1. The face mon four harness twill woven alone weave can be of any description appropriate for the combination desired and in this case it is the com-

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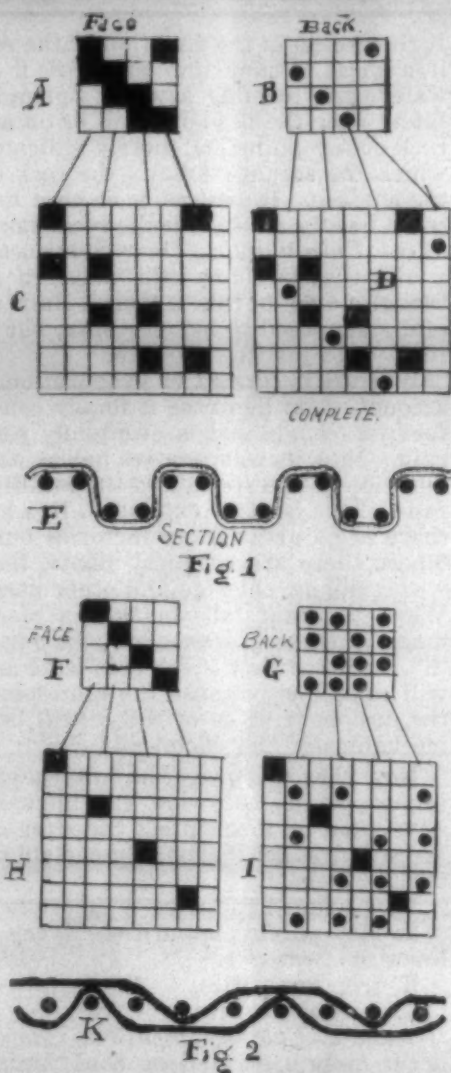


Fig 2

effect, although it could be a satin weave, basket or plain draft. This backing weave is marked B. The first operation consists in bringing the twill weave from section A down on the new draft paper as shown in section C.

The first thread of the warp at the left is taken down to the first position in the corresponding place on the new draft. And then the second thread is placed in its nature on the new design by counting every other thread alternately. Starting at the left therefore we have one of the warp threads up on the new design. The next space on the new draft must be left open as it belongs to the system of backing threads to be cared for later. The third space belongs to the face warp but as this thread is down, the space is left blank. The next thread is the same, but the next one is up on the face warp and therefore is marked as up in the space in the new draft. The same plan is followed with warp threads two, three and four of the face so we get the result shown. Next the back warp threads are transposed to the new draft. The threads from the back in section B are carried to section D on precisely the same plan as illustrated in the transposing of the face warp threads to the new draft. This gives the completed draft. Section E shows the arrangement of the warp threads, which are represented by the round dots, as they lie in the texture in relation to the filling which is represented by the line extending from side to side. It will be noticed that there are always two warp threads up and two down.

Weaving With Two Systems of Filling and One System of Warp.

We next reverse the conditions and prepare to draft a design in which there shall be two systems of filling and only one system of warp. This type of weave is presented in Figure 2 in which we use an ordinarily diagonal as the face, shown in section F. When these threads are transposed to the new draft paper according to the plan explained above, we get the result shown in section H.

The backing in section I is amply a four harness twill of the ordinary class, but any other weave of a similar order might be used. These backing threads are transposed to the new draft as formerly and we obtain the completed draft as exhibited. Section K shows the interlacings of the two systems of filling, resulting from this weave, in its relation to the intersections of the single system of warp threads. As it is not intended that the backing systems of yarns in any of these goods be seen through the face systems, it is important that all of the backing picks be effectually covered by the face picks. Each succeeding pick must cover any portion of the pick previously placed and not already covered. Double cloths will be considered next.

Remedies for Dyehouse Troubles

A Series of Articles By W. C. DODSON, B. E.

CHAPTER XXII

WATER IN THE DYEHOUSE

Imperfect bleaching, such as yellow spots, a general yellowish coat to the goods, brown spots and harshness in the finished goods can all be caused by improper water. Gummy spots on bleached goods also develop at times and cause considerable trouble if water is bad.

Practically all bleaching; and many dyeing troubles are directly traceable to impure water, so a fairly thorough consideration of water, its impurities and their effects on the goods and chemicals is necessary at this point.

There are two or more classes of impure water but the only class we will attempt to deal with is that one affecting the dyer and bleacher. It is well at this point to set forth the sources of water possible for use in the dyehouse. These consist of:

- (a) City water.
- (b) Artesian well water.
- (c) Surface water, such as lakes and rivers.
- (d) Shallow well water, including springs.
- (e) Rain water.

(a) *City Water*: As a rule this type of water is satisfactory for use in both dyeing and bleaching. Most of the impurities both chemical and mechanical have been removed at the city pumping station where the water is treated somewhat as follows: It is first run into settling basins and allowed to stand for some time. Here the sunlight and air make some improvements on it and most important of all much of the mud and sand settle to the bottom. Sodium carbonate known as soda ash is also added as well as sulphate of alumina. The water is now drawn off near the top of the tank and a small amount of dissolved aluminum sulphate, generally known as alum, is allowed to run in constantly. This alum water reacts with the impurities, forming very fine particles of a gelatinous nature. The water now passes through a filter made of pebbles, coke, charcoal and sand and the impurities being in the gummy gelatinous form caused by the alum, are filtered out. Almost the same process is carried out by the patented purifiers installed in some mills.

(b) *Artesian Well Water*: This water varies in quality in different localities. The author has even known it to vary in the same wells at different times. The two cases in mind having occurred at two North Carolina mills during one summer. Artesian wells are merely shafts that are sunk into the earth until they tap reservoirs of water that has seeped down into chambers formed after or during the formation of the earth. The chemical make up of the walls of these chambers or of the channels leading to them determines in a large measure the chemical character of the water.

(c) *Surface Water*: All bodies of fresh water are included in this source and as to whether the water is impure mechanically or chemically, depends largely on the nature of the locality of such bodies of water. Surface water ranges from very pure to very impure.

(d) *Shallow Well Water*: This type of water and spring water also get their chemical character from the character of the ground through which they seep. A spring or shallow well gets its water from the rain that soaks through the soft porous earth until it strikes non-porous rock.

It then seeps in the direction of the rock slope and if a shaft is sunk into this rock it will fill with water, this forming a well. Springs are usually found near the base of a hill or on a slope near a rock out-cropping and merely indicate the point at which the seepage follows the rock and comes to the surface. It can easily be seen how the water could be affected in case the rock was of limestone.

(e) *Rain Water*: The writer does not know of a mill that is using rain water in the dyehouse though no doubt this is done. Rain water is generally supposed to be very pure, but it is possible for it to be just the opposite.

When it is formed by evaporation and rises on account of its lightness it finally condenses in the form of clouds and is eventually precipitated as rain. Now its comparative purity depends on the duration of the storm and the locality in which it falls. This is easily explained. In a locality where there are a great many factories burning coal or where there are chemical plants, the air is filled with sulphur, chlorine and other gasses and dust. When the rain falls in such a place it absorbs much of these gasses. So much for the effect of the locality. Now if the rain lasts long enough it will completely cleanse the atmosphere and after the first hour or so of fall it will be much purer mechanically and chemically.

Now that we have seen how water can become impure let us see what the impurities are and how some of them affect the dyer and bleacher. We will first list the more important ones and then discuss them:

1. Calcium impurities ("limestone water").
2. Magnesium impurities (very similar to limestone water").
3. Iron impurities.
4. Acid impurities.

1 and 2. *Calcium Impurities*: These impurities occur more often and no doubt cause more trouble than all the others, with the exception of the magnesium impurities. Since the two are so similar in results we will speak of them both under one heading.

They occur in the form of the soluble chlorides, sulphates and bicarbonates. Now when ordinary soap is placed in water containing these impurities a reaction occurs forming insoluble gummy masses which precipitate onto the machines and the goods. The soap does not foam well or at all and its cleansing power is partially or wholly destroyed until all such impurities have been precipitated. This precipitation not only makes it more difficult to turn out good work, but also costs the mill considerably more for soap. This is the result with soap in "hard" water. Some dyestuffs suffer just as badly.

To remedy this type of hard water, the chemicals usually used are soda ash and calcium hydroxide—preferably together. If these chemicals are poured and well mixed in a tank of the hard water the impurities will be precipitated and the water can be drawn off the top and used. Often their addition to the soap bath or dye bath just prior to the entry of the soap or dye will materially help the situation.

3. *Iron Impurities*: Iron ore is distributed so generally that most all localities have soluble iron compounds in their water. It is especially bad in iron mining communities and its effects on soap

(Continued on Page 25)

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Testing The Strength of Fabrics

(*By J. Huebner.

The load under which a fabric breaks when a tensile strain is applied has hitherto usually been considered as a true indication of its strength, and the effect of the processes through which a fabric has to pass and the chemical agents employed in these processes has, as a rule, been judged by its tensile strain. It has, however, been found that the resistance of a fabric to bursting or to ripping affords often valuable additional information, and in many cases a bursting or a ripping test can replace the more tedious tensile test.

The four types of cotton fabric (I., II., III., IV.) tested were of a high quality and purity, uniformity of structure and minimum weight with maximum tensile strain were the ruling factors in their production. They were made from yarns spun from long stapled cotton, and a method of scouring was used which caused uniform purity and minimum reduction in strength.

It may, therefore, be assumed that tests of an average fabric may give appreciably higher figures for both the greatest and the least variations in strength when compared with the four fabrics under consideration. It

*A paper read before the Society of Dyers and colorists.

should be pointed out that most of the average figures given are the results of testing hundreds of pieces, a fact which should enhance the value of these figures considerably. Wherever possible the greatest and the least variations in the strength of fabrics of the same type are given. A study of these figures will show that, when ascertaining the effect of chemical agents, or of processes, upon the strength of a fabric, too much value should not be attached to average figures which are the results of a small number of tests.

The average weights, in ounces per square yard, of the scoured fabrics tested were—I., .74; II., 3.20; III., 2.36; IV., 1.93.

The mean counts of the warp and weft yarns in the scoured fabrics were as follows:

	Warp	Weft
I.	42.43	51.36
II.	50.88	56.81
III.	75.51	79.56
IV.	90.50	102.90

The tensile strain of the fabrics was ascertained on a Goodbrand machine. Each strip of fabric tested was two inches wide, and it was frayed along both edges to ensure that every thread should be firmly held in the clips during testing. The clips were 6 1/2 inches apart. Ten tests, warp and weft way, respectively, were carried out on each

piece.
Varying Strains.
The tensile strain in all the pieces tested varies as follows:

Warp Way.	
Greatest Variation—	
I.	176 to 132 or 44 lbs.
II.	142 to 92 or 50 lbs.
III.	104 to 68 or 36 lbs.
IV.	84 to 70 or 14 lbs.
Least Variation—	
I.	147 to 142 or 5 lbs.
II.	116 to 113 or 3 lbs.
III.	95 to 93 or 2 lbs.
IV.	71 to 70 or 1 lb.

Weft Way.	
Greatest Variation—	
I.	147 to 110 or 37 lbs.
II.	120 to 88 or 32 lbs.
III.	122 to 101 or 21 lbs.
IV.	74 to 55 or 19 lbs.
Least Variation—	
I.	158 to 156 or 2 lbs.
II.	105 to 102 or 3 lbs.
III.	65 to 64 or 1 lb.
IV.	79 to 77 or 2 lbs.

In the next table the highest mean, the lowest mean, and the grand mean tensile strain of all the fabrics tested is given:

Warp Way.	
Highest Mean	Lowest Mean
I. 157.2 lbs.	128.5 lbs.
II. 131.1 lbs.	104.1 lbs.

III. 101.2 lbs.	80.7 lbs.	89.9 lbs.
IV. 76.3 lbs.	56.1 lbs.	70.3 lbs.
Weft Way		Grand
Mean Highest	Mean Lowest	Mean Tested
I. 158.7 lbs.	133.8 lbs.	146.2 lbs.
II. 135.6 lbs.	103.4 lbs.	121.1 lbs.
III. 108.6 lbs.	64.8 lbs.	88.0 lbs.
IV. 82.8 lbs.	50.3 lbs.	71.4 lbs.

In paper-testing the bursting strain is frequently considered as a suitable test of strength and quality. Apparatus for ascertaining the bursting strains of papers have been in use for many years, and the type in which the paper is burst by means of an inflated rubber diaphragm (Mullen) seems to give the most satisfactory results. Numerous bursting tests have shown that papers made on the Fourdrinier machine, which are as a rule stronger in the machine way, and weaker in the cross way, invariably burst in one direction, whilst hand-made papers and uniform gelatine or cellulose films vary; they burst in all directions, and with these bursting frequently proceeds in more than one direction simultaneously.

It was found impossible at the time when the experiments had to be carried out to obtain a suitable apparatus quickly. A temporary apparatus was therefore constructed in the College of Technology engineering (Continued on Page 16.)

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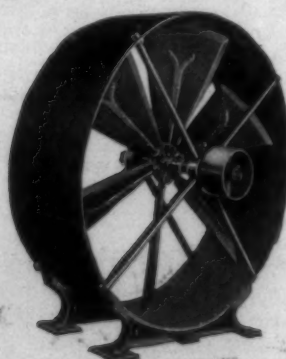
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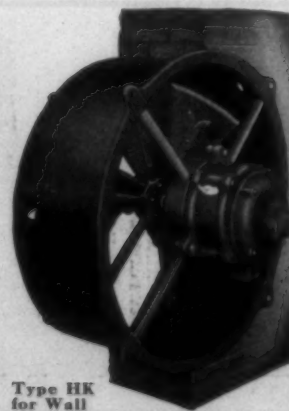
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Restraining Order to Prevent Sale of Priscilla Mills Stock.

The proposed sale of a large number of shares of stock in the Priscilla Mills, Gastonia, N. C., which was advertised by J. H. Mayes, president and treasurer of the mill, to be held on Tuesday, has been held up

by restraining order issued by Judge Bis Ray in Gastonia, on complaint of certain stockholders. The sale, according to recent advertisements by Mr. Mayes, was to have been held to satisfy claims of the mill against certain stockholders who had not made final payment on their stock subscriptions.

It was alleged in the restraining order that the mill was promoted for selfish interests, that it had been badly managed, that extravagant sums had been spent in the erection of a costly building and that the corporation was in a state of insolvency. On the strength of these allegations the injunction was issued

and the advertised sale of stock was called off. The defendant, the Priscilla Spinning Company, is cited to make answer to the complaint on December 10th and show cause why a receiver should not be appointed for the corporation.

In answer to the restraining order, Attorney Shannonhouse stated to a group who had gathered at the mill office for the sale that he was glad the injunction had been issued, in that it gave the defendant corporation an excellent chance to make reply to the charges in the order, which he alleged were false and unfair. He stated that the mill company had endeavored in every possible way to collect the subscriptions to the stock of the mill without resorting to legal process. He further stated that the officers and directors of the mill had been extremely economical in the handling of the business of the firm and that wholesale charges of incompetency and extravagance were false. J. H. Mayes, president of the mill, concurred in these statements. The defendant company will make answer by December 10th. The text of the restraining order is as follows:

The Complaint.

In the Superior Court, State of North Carolina, Gaston County.

F. M. Francum, R. Winchester Rankin and Harry Shuford and all others who desire to come in as parties plaintiffs in this action,

vs.

Priscilla Spinning Company, J. H. Mayes, President and Treasurer of the Priscilla Spinning Company, and J. H. Mayes.

The plaintiffs complaining of the defendants, allege:

1. That the defendant, the Priscilla Spinning Company, is a corporation chartered under the laws of the State of North Carolina.

2. That the defendant, J. H. Mayes, President and Treasurer, is acting President and Treasurer of the said defendant corporation.

3. That on or about the.....day of....., 19...., the defendant, J. H. Mayes, as the plaintiffs are informed and believe, in an effort to promote his own interest, started and promoted a movement for the purpose of organizing a corporation for the manufacture of cotton goods, representing that the plant or principal place of business of such corporation would be in the County of Gaston, State of North Carolina, and sought and solicited subscriptions to stock in the hands of the plaintiffs and various other persons and parties representing that such corporation would consist of 10,000 shares of par value of \$100 (One Hundred Dollars) per share, and the plaintiffs herein, and as the plaintiffs are informed and believe, others joining in this suit, relied on the representation that the said full amount of 10,000 shares of par value of \$100 (One Hundred Dollars) per share would be fully subscribed and collected, signed such subscription list, and took stock as follows, to-wit: The plaintiff F. M. Francum, fifty shares; the plaintiff R. Winchester Rankin, fifty shares; and the plaintiff Harry Shuford, fifty shares, and subsequent thereto, relying on the representation as afore-

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THE BARRETT COMPANY, Ltd. Montreal Toronto
Winnipeg Vancouver St. John, N. B. Halifax, N. S.



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said, the said Francum purchased the subscription rights of another party to ten additional shares and the said Rankin, relying on the representation as aforesaid, purchased the subscription rights of another party to twelve additional shares.

4. That subsequent thereto, the said Francum, relying on such representation, paid the call of \$1,000 (One Thousand Dollars) on such subscription, and the said R. Winchester Rankin paid the call of \$1,000 (One Thousand Dollars) on the said 50 shares. That as the plaintiffs are informed and believe, the defendant Mayes wrongfully and knowingly, through himself and agents, solicited and accepted a large number of subscriptions aggregating a large sum of the amounts subscribed, which are totally insolvent and uncollectable, and which the defendant Mayes knew, or had reasonable grounds to know, were insolvent and uncollectable. That on the 1st day of August, 1920, and the 1st day of January, 1921, and the 1st day of April, 1921, the said corporation purported, through its officers and directors, to make three calls or assessments on such subscription aggregating 30 per cent, and the same not having been paid, the said J. H. Mayes, as president and treasurer, is advertising the shares or interests of the aforesaid plaintiffs and others to be sold at the office of the Priscilla Spinning Company, near Ranlo, North Carolina, on the 28th day of November, 1921, at the hour of 10 o'clock a. m.

5. That as the plaintiffs are in-

formed and believe, the said J. H. Mayes, by himself and his agents, has mismanaged the affairs of such corporation in that before collecting the subscriptions, or a sufficient amount thereof, proceeded to construct or erect an unnecessarily expensive building at or near Ranlo, and has mismanaged or extravagantly spent the assets of such corporation, and has rendered a statement which is more or less indefinite in that it does not show except in a general way certain items of expenses such as pay-rolls and other items, and as the plaintiffs are informed and believe, the said plant cannot be completed and equipped with machinery for manufacturing purposes for which it was intended for the said sum of \$1,000,000 (One Million Dollars) capital stock, due principally to the extravagant and unnecessary and wasteful expenditure of the money and assets of such corporation in the construction of the said mill building and tenement house, and for the further reason that as the plaintiffs are informed and believe, a large sum of the amounts subscribed as aforesaid will not and cannot be collected.

6. That as the plaintiffs are informed and believe, if the said J. H. Mayes and his agents are allowed to proceed with the collection of the subscriptions of the plaintiffs and subscription of others joining in this litigation, and the same is spent by the said Mayes and his agents in an effort to complete the said plant, the plaintiffs will suffer irreparable damages in that a large amount cannot be collected, and as the plain-

tiffs are informed and believe, the uncollected amounts will be taken as Treasury Stock by such corporation and being worth, as the plaintiffs are informed and believe, much less than par value, the plaintiffs will thereby suffer irreparable loss and damages.

7. That as the plaintiffs are informed and believe, such plant cannot be completed under the present subscription list or in the condition it is in as aforesaid except at great loss to the subscribers of stock, and it is to the interest of these plaintiffs and all other subscribers of stock joining in this litigation, for such property to be placed in the hands of a receiver and the affairs of such corporation wound up under the supervision of the court.

8. That as the plaintiffs are informed and believe, the said J. H. Mayes, acting as President and Treasurer, and his agents has wrongfully released certain subscribers to stock, forcing the corporation, as the plaintiffs are informed and believe, to take and hold such stock as Treasury Stock, when the same is worth less than par as aforesaid, thereby causing irreparable loss to the plaintiffs.

9. That as the plaintiffs are informed and believe, if the present management and purposes of the officers of such corporation is continued, there is eminent danger that said corporation will become insolvent.

10. That as the plaintiffs are informed and believe, if the defendant are not restrained and enjoined from selling the stock of the plain-

tiffs and the stock of other subscribers, the same will be sacrificed and the plaintiffs will suffer irreparable damage and injury.

Wherefore, the plaintiffs pray:

1. That the defendants be required to show cause before the Judge for Jurisdiction of the cause at a date to be fixed, why a receiver shall not be appointed.

2. And that the sale of stock be restrained and enjoined.

3. For the costs of the action.

4. For such other and further relief as the plaintiffs are in law and equity entitled.

Dyestuff Suit is Settled.

The suit of Edgar Levinstein against E. I. du Pont de Nemours & Company, alleging breach of contract for supplying dyestuffs to the plaintiff, which has been pending for some time in the United States District Court at Boston, has been withdrawn and the matters of difference between Levinstein and the Du Pont Company have been amicably adjusted and settled out of court and the suit dismissed.

Among the Fresh Meat.

Among those who will travel the hot sands at the meeting of the Oasis Shrine at Charlotte, N. C., on December 6th and 7th, the following cotton manufacturers are noted: H. H. Boyd, Charlotte, N. C.; Osborne Brown, Long Island, N. C.; C. W. Kale, Belmont, N. C.; A. B. Kuhn, Newton, N. C., and J. L. Nelson, Lenoir, N. C.

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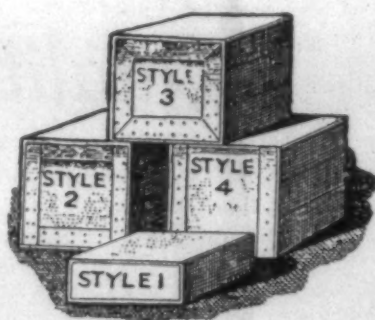
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Drawer 330

HICKORY, N. C.

Testing the Strength of Fabrics.

(Continued from Page 13.)

neering workshops. It had a rubber diaphragm three and one-half inches in diameter, and water was used to inflate it, but probably a disc with a larger diameter than the one employed would give even better results. It provided what I believe to be a reliable means of ascertaining the weakest direction of a fabric. A fabric which is considerably weaker in one direction than in the other will always burst in the weakest direction.

In order to determine the bursting strain of a fabric a circular hole, half an inch in diameter, was punched in the middle of the test piece, because it was found that a hole allows the fabric to give way more readily along the line of least resistance, whereas if a slit, half an inch long, is cut into the test piece the direction of the burst follows that of the slit practically in all cases, except where the difference in strength between warp and weft is very marked.

The bursting strains, in pounds per square inch, are given below. Although the figures represent pounds per square inch, they are, as will be seen later, comparable with the tensile and the ripping strains. The figures found in columns A, B, and C represent the mean values of a large number of tests:

	A	B	C
	Highest	Lowest	Grand
	Mean	Mean	Mean
I....	17.50 lbs.	11.0 lbs.	14.50 lbs.
II....	14.75 lbs.	10.2 lbs.	12.91 lbs.
III....	11.00 lbs.	7.5 lbs.	9.50 lbs.
IV....	8.75 lbs.	5.5 lbs.	7.37 lbs.

The ratio between the sums of all the tensile strains of warp and weft obtained, when divided by two, and the mean bursting strains, are as follows:

	Mean	Mean	
	Tensile	Bursting	
	Strain	Square	Ratio
	Inch		
I....	145.1 lbs.	14.50 lbs.	10.01 to 1
II....	123.0 lbs.	12.91 lbs.	9.52 to 1
III....	90.7 lbs.	9.50 lbs.	9.57 to 1
IV....	73.6 lbs.	7.37 lbs.	9.99 to 1

The figures show that the bursting strain is comparable with the tensile strain, and that it affords a reliable indication of the strength of these fabrics.

It should, however, be pointed out that the tensile strain, warp and weft way, of the four fabrics under consideration is fairly uniform, and that the above conclusion would not apply to fabrics which are appreciably weaker in one direction than in the other. In such cases the bursting strain would undoubtedly indicate the weaker direction. It would therefore be directly comparable with the tensile strain of the weakest direction of the fabric, but it would always be below the mean of the tensile strain warp and weft ways. As a fabric will, in most cases, give way in its weakest direction, its bursting strain will, therefore, afford a true indication of its actual strength. The fact that bursting tests can be carried out much more rapidly than tensile tests, and that less fabric is required, should

further enhance the value of this method of testing.

In order to ascertain the effect on the bursting strain of the half-inch hole in the test piece, a large number of bursting tests were carried out in which test pieces with and without the hole were employed.

The ratios of the bursting strains of unwounded fabrics to those of wounded fabrics are as follows:

	Unwounded	Wounded	Ratio
	Fabrics	Fabrics	
	Mean	Mean	
	Bursts	Bursts	
I....	50.958	14.93	3.426 to 1
II....	46.041	13.41	3.512 to 1
III....	34.395	9.43	3.647 to 1
IV....	25.125	7.27	3.455 to 1

The ratios of the bursting strains of the four unwounded fabrics to those of the corresponding wounded fabrics being practically the same, all the bursting tests were carried out on test pieces into which a hole of half an inch in diameter had been punched, because the life of the rubber diaphragm is very much shorter with the higher pressure required to burst the unwounded fabric.

It is well known that testing by hand in order to ascertain the resistance of a fabric to a ripping strain, i. e., to detect tendering of a fabric, is carried out daily in the bleach works, the dyehouse, and the print works. No attempt seems, however, to have been made hitherto to carry out more accurate tests by the aid of suitable apparatus, although, as might be expected, such tests should provide valuable information with regard to the effect upon the fabric, of the many processes through which it has to pass, and the chemical agents which are employed in these processes. Investigation of the strains required to rip plain fabrics shows that, compared with the tensile strain of a two-inch strip, the former is remarkably low. This is due to the fact that the strain has to be borne in succession by one or two threads of warp or weft respectively. A ripping test reveals in many cases much more readily any tendering or change which may have taken place in a fabric than does a tensile or a bursting test. Further, in the wear and tear of a fabric its weakness is more often revealed when subjected to a ripping than to a tensile or a bursting strain.

After numerous experiments, the method for determining the ripping strain of a fabric was adopted which appeared to resemble most closely that of manual ripping. It consists in cutting either the warp or the weft threads to a depth of two inches, then fixing one end of the cut piece in the upper and the other end in the lower jaw of a "schopper" paper-testing apparatus. The jaws were made to move apart at a uniform speed (3 inches per minute) for a distance approximating to two inches, and the strain was applied at right angles to the threads to be broken. Twenty tests were made on each sample, ten warp and ten weft way, but a reading was taken each time the lever of the machine became stationary. As a rule two to four readings were thus obtained from each test.

The ripping strains, in pounds, of

the scoured fabrics are given in the following tables:

Warp Way.

	Highest Mean	Lowest Mean	Mean of all the Samples Tested
I....	4.32	2.75	3.69
II....	4.25	2.10	3.58
III....	3.57	2.47	2.99
IV....	3.16	2.24	2.60

Weft Way.

	Highest Mean	Lowest Mean	Mean of all the Samples Tested
I....	3.70	2.90	3.35
II....	4.25	2.90	3.40
III....	3.46	2.23	2.98
IV....	3.26	2.03	2.70

In the following table a comparison between the mean tensile and the mean ripping strains is given:

	Mean Tensile Strains	Mean Ripping Strains
I....	143.5	146.7
II....	124.7	121.3
III....	90.61	90.8
IV....	73.8	73.4

The figures show that the ripping strains of the lighter fabrics, when compared with those of the heavier fabrics, are proportionally much higher.

The ratio between the mean bursting strains, and the sums of all the ripping strains of warp and weft, when divided by two, is as follows:

	Mean Bursting Strain	Mean Ripping Strain	Ratio
I....	14.50	3.53	4.11 to 1
II....	12.91	3.57	3.61 to 1
III....	9.50	3.015	3.15 to 1
IV....	7.37	2.615	2.82 to 1

So far plain fabrics only have been dealt with. With a plain weave it is impossible to use as many threads per inch as with a weave such as matt, but in the former every thread is held more securely in position than in the latter. This is the reason why the ripping strain of plain fabrics is so low, because when the strain is applied the threads are broken one by one in regular succession, whilst in a less firmly united fabric the threads are capable of sliding when under strain, which prevents them from being broken singly.

A comparison of the tensile strain, the bursting and the ripping strain of a plain fabric, a 2x2, a 3x3, a 4x4 matt, a 4x1 warp, and a 1x4 weft sateen, woven from the same quality and quantity of yarn, is given in the following table:

	Tensile Strain lbs.	Bursting Strain Mm.p.	Ripping Strain
Plain—	97.1	131.7	11.87
2x2—	95.7	120.0	17.25
3x3—	87.2	113.1	17.87
4x4—	88.2	100.0	21.1
Sateen—			
4x1—	107.0	115.0	15.5
1x4—	104.0	111.0	19.0

It will be observed that with the exception of the sateens the increased ripping and bursting strains are accompanied by decreased tensile strain.

For structural reasons a sateen cannot be equally strong in both directions.

A further series of experiments was carried out in order to ascertain the effect of bleaching, of mordanting, and of dyeing, upon the tensile and the ripping strain of fabrics. For the first experiment the scoured fabric was well but carefully bleached, whilst in experiments (a) to (c) the scoured fabric was used.

(a) Mordanted with 3 per cent of tannic acid and fixed with tartar emetic.

(b) Mordanted with aluminum sulpho-acetate, aged and dunged.

(c) Mordanted with acetate of iron and treated as (b).

(d) Dyed with 3 per cent of chlo-razol dark green.

(e) Dyed with 7 per cent thional yellow green.

	Tensile Strain lbs.	Elongation Percent	Ripping Strain lbs.
Scoured Fabric	102.2	88.6	6.2
Bleached Fabric	111.8	103.2	5.4

(a) ...110.0 95.8 5.6 15.0 1.82 2.26

(b) ...103.8 93.0 6.0 13.8 1.17 1.09

(c) ...97.0 92.6 5.5 14.0 1.50 1.42

(d) ...106.0 86.6 5.3 15.0 2.06 2.38

(e) ...109.8 95.6 5.6 13.8 2.32 2.39

In another experiment the scoured fabric was padded with chromium acetate and fixed with soda. A comparison of the tensile, the bursting, and the ripping strain is given in the following table:

	Tensile Strain	Bursting Strain	Ripping Strain
Scoured	74.0	76.2	7.83
Padded	84.8	94.4	7.00

An examination of the table shows that bleaching has increased the tensile strain slightly, but has reduced the ripping strain, particularly in the warp way. Tannic acid has increased the tensile strain considerably, but, except a slight reduction in the warp way, the ripping strain has remained unchanged. Aluminum and iron mordants have reduced the ripping strain very considerably, whilst dyeing with a direct dyeing dyestuff, and with a sulphur dyestuff respectively, has not appreciably affected either the tensile or the ripping strain of the fabric. A distinct increase in the tensile strain has resulted from the application of a chromium mordant, but the bursting strain of the fabric has been appreciably reduced, whilst the ripping strain, both warp and weft way, has been reduced over 50 per cent.

Santee Mills (Bamberg Branch) Bamberg, S. C.

I. N. Dunn.....	Mgr. and Supt.
J. W. Freeman.....	Carder
W. B. McMillan....	2d Hand Carding
G. R. Collins.....	Spinner
S. C. Farr.....	Slasher
G. R. Collins.....	Warper
S. C. Furr.....	Weaver
John Dodd.....	Loom Fixer
Burrel Maupin.....	Loom Fixer
J. G. Sills.....	Loom Fixer
John Moody.....	Loom Fixer
H. H. Ellis.....	Cloth Room
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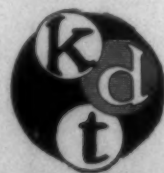
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THURSDAY, DECEMBER 1, 1921.

The Lion and the Lamb.

When we read in the daily press that the North Carolina branch of the Federation of Labor had induced the North Carolina Farmers' Union to affiliate with them and sign certain documents we recalled vividly the old fable of the lion and the lamb lying down together.

About the only thing that they have in common is that both parties to the contract are habitually "agin'" everything and the proper name should be the League of Agin's.

With the exception of that idea their paths diverge sharply and the labor union agitators will have to use mufflers when they talk to the farmers.

Imagine a group of farmers who work from sun up to sun down listening to Thomas Failure McMahon discoursing upon the 44-hour week and telling the farmers that their hired men should not be required to rise before 8 a. m.

The farmers work their own children and hired children from the time they can walk and would not take kindly to the suggestion that no child should be allowed to handle a hoe until sixteen years of age.

Can you imagine farmers who have finished a year with a bare living flocking to town to help a lot of negro brick masons win a fight which their union has started for the purpose of advancing their wages from \$10 to \$12 per day.

If the farmers believe in union labor they can not object to their

hired help being unionized and demanding more wages.

Verily the word harmony will be an unknown quantity when the farmers and the labor unions meet together.

Japan's Needs.

We note the following very terse and well written paragraph in the weekly market letter of the Hunter Manufacturing and Commission Company of New York:

"Through the week, the Armament Conference in Washington has received more attention than anything else, and deserves it because of its possibilities. The United States at present holds the bulk of the world's wealth and the rest of the world need its aid through loans in order to get back on its feet, but the United States is not disposed to lend abroad while borrowing nations persist in squandering hundreds of millions on armies and navies. If an agreement can be reached along the lines of Secretary Hughes' plan to cut down war expenditures, credit will be loosened sufficiently to set the wheels of commerce moving again throughout the world. Nothing else could possibly be of such benefit to American commerce as a satisfactory conclusion of the present conference, and its affect on raw cotton and on cotton goods would be quite as marked on anything else."

What they have to say about the financial supremacy of the United States is correct and no one need discount the influence of money, or the need of money, upon the action of the nations that sit around the Armament Conference tables.

Japan knows that the United States has the bulk of the world's wealth and Japan will need money

in large volume in the next few years.

On the other hand, Japan faces the absolute need of more land for her growing millions and even if her intentions are good, she must consider her national welfare.

The United States will not permit the immigration of Japanese to her west coast or to sparsely settled Mexico.

Canada, with less than 6,000,000 people, on more land than the United States, has shut them out, while Australia, with 4,000,000 people, and Brazil, with 2,000,000, both with areas larger than the United States, denies admission to the Japs.

The countries throughout the world with sparsely settled land and large areas entirely unsettled refuse to permit the immigration of Japanese and naturally they turn to Manchuria and the other possessions of the docile Chinese.

We hold no brief for the Japanese and recognize that they are a shifty, tricky nation, but self preservation is the first law of nature and to live Japan must shut off her surplus population.

The public sentiment of the world and the influence of the wealth of the United States tend towards success of the Armament Conference but Japan's needs apparently can not be satisfied without invading the rights of others and around that problems the great minds of the world are moving in a circle.

Labor Unions and Milk Wagons.

Under the guidance of union leaders the wages of the men who drove milk wagons in New York City had been advanced to \$7.17 per day with the result that the milk which the poor of the city were obliged to buy for their babies had risen in price to an extent that made it almost prohibitive and the only alternative of thousands of poor families was to reduce their milk purchases to an extent that endangered the health of their little children.

Not even satisfied with that situation the union agitators caused the milk wagon drivers to demand an additional wage of \$5.00 per week and when refused, tried to cause a milk famine that threatened the lives of hundreds of thousands of the babies of New York.

A milk driver getting \$7.17 per day and demand a further advance of \$5 per week is an indication of the fact that union agitators are never satisfied.

Their willingness to cause the death of thousands of innocent babies in order to get the extra \$5 per week is typical of the spirit of labor unionism.

Cotton Manufacturers' Association of North Carolina Meets This Week.

The mid-winter meeting of the Cotton Manufacturers' Association of North Carolina was held in Pinehurst, N. C., on Friday and Saturday of this week. Secretary Hunter Marshall arranged a very attractive program and a large number of the members were present.

Special attention was paid to the social features of this meeting, and the members and guests had all the privileges of the famous winter resort. A full account of the meeting will be published in our issue of next week.

English Mills 52.1 to 71.4 Per Cent Efficient.

Manchester, Eng.—One of the best pieces of research work ever undertaken by the Government concerned itself with an investigation into the working conditions of textile mills. It is deplorable that in the cry for reduction of expenditure this department should have been scrapped. There remains hope that some sort of working arrangement might be made whereby the cotton and other textile trades will help the board to carry on.

The figures given in the report relative to weaving sheds were remarkable. They proved that on the average each loom in a Lancashire mill with the highest efficiency was stopped for one minute in every ten, while in the case of the more common efficiency of 50 per cent, the loom is actually stopped during half the week. This of course would not prevail in a shed employing automatic looms which are so largely the vogue in the United States.

Individual differences depend largely upon the kind of cloth woven. Thus counts of 30, 16, 14 and 13 gave respectively efficiencies of 71.4, 66.7, 66.3 and 52.1 per cent. A fine weft requires less re-shutting than a coarse weft and consequently time is saved accordingly. There is a very great deal to be learned of the relative importance of the human and mechanical forces in the processes involved.

In winding, for example, it has been shown that the relation of machine design to human requirements is most important. Where it is possible to obviate undue stretching and bending on the part of the operative considerably greater efficiency can be secured. The outsider would scarcely credit the fact that there are 40 operations involved in the work of bobbin winding with five more occasional operations.

Some of these operations involve only a few seconds, others up to five minutes, but they are all essential to the process.—Daily News Record.

French Yarn Interests Locate in Upper Silesia.

Berlin—According to reports from Poland, the worsted yarn interests of Northern France are erecting branch establishments in Upper Silesia. The name of the firm of Motte in Roubaix is especially mentioned in this connection.

News

F. T. Garrett, of Monroe, La., is now fixing looms at the Scottsdale (Ga.) Mills.

S. W. Engram has been promoted from second hand to overseer of weaving at the Monroe (Ga.) Mills.

J. C. Perkins has been promoted from loom fixer to second hand in weaving at the Monroe (Ga.) Mills.

D. H. Whitener, of Gastonia, N. C., is now overseer of spinning at the Union Mill No. 2, Mt. Holly, N. C.

Allen Stuart has resigned as card grinder at the Clinchfield Mill No. 2, Marion, N. C.

John C. Stround has accepted the position of general overseer of carding at the Loray Mills, Gastonia, N. C.

M. H. McClendon has been appointed superintendent of Division No. 1 of the Loray Mills, Gastonia, N. C.

T. L. Orr has been promoted from section hand to second hand in spinning at the Loray Mills, Gastonia, N. C.

B. B. Comer, vice-president of the Avondale Mills, Birmingham, Ala., has just returned from a trip to New York.

W. N. McCollough, formerly of Newnan, Ga., has accepted the position of master mechanic at the Kincaid Mill No. 2, Griffin, Ga.

H. L. Jay has not resigned as superintendent of the Brookford Mills, Brookford, N. C., as was recently reported through error.

J. P. Farr, formerly overseer of spinning at the Covington Mills, Covington, Ga., has returned to that position after having been in the mercantile business for some time.

John P. Hallman, formerly overseer of weaving at the Republic Mills, Great Falls, S. C., has accepted a similar position at the Edna Mills, Reidsville, N. C.

P. C. Willingham, who has been outside overseer of the Easley (S. C.) Mills, has accepted a similar position at the Woodside Mills, Greenville, S. C.

E. S. Dunn, general assistant superintendent of the Sylacauga branch of the Avondale Mills, has returned from a ten-day business trip to Philadelphia.

W. E. Simpson has resigned as section hand in carding at the Fieldale Mills, Fieldale, Va., to do overhauling at the Martinsville Cotton Mills, Martinsville, Va.

H. Hamilton has resigned as overseer of spinning at the Bladen (N. C.) Cotton Mills, to become overseer of carding and spinning at the Ernsaldson Mills, St. Pauls, N. C.

H. Hubbard, of Salisbury, N. C., has accepted the position of overseer of spinning and winding at the National Cotton Mills, Lumberton, N. C.

A. A. De Lewis has resigned as overseer of winding and twisting at the Louisville (Ky.) Mills to become overseer of winding and twisting at the Dixie Mercerizing Company, Chattanooga, Tenn.

W. R. Thomas has resigned as night superintendent of the Miller Cotton Mills, Waco, Texas, to become overseer of weaving at the Cotton Products Corporation, Natchez, Miss.

P. Leonard Cox has resigned as second hand in weaving at the Fairmont (S. C.) Manufacturing Company to accept a similar position with the Victor plant of the Victor-Monaghan Company, Greer, S. C.

J. T. Knight has resigned as overseer of carding and spinning and assistant superintendent of the Lillian Mills, Bessemer City, N. C., to accept a similar position at the Prendergast (Tenn.) Mills.

E. L. Sord has resigned as overseer of carding and spinning at the Adams Mills, Macon, Ga., to become overseer of spinning, twisting and spooling at the Payne plant of the Bibb Manufacturing Company, Macon.

M. R. Poucher on Southern Trip.

M. R. Poucher, director of the dyestuff sales department of the E. I. du Pont de Nemours Co., arrived in Charlotte Thursday morning. In company with J. L. Dabbs, Southern representative of the company, he attended the meeting of the Cotton Manufacturers' Association of North Carolina at Pinehurst this week. Mr. Poucher, while in the South, will visit a number of mill centers to study general mill conditions in this field. He is recognized as one of the leading men in the American dyestuff industry. Dec. 1, 1922

Ashby L. Baker Dead.

Ashby L. Baker, president and owner of the Virginia Cotton Mills, Swepsonville, N. C., a director in the McAden Mills, McAdenville, and largely interested in a number of other mill companies, died at his home in Raleigh on last Friday. He had been ill for several months.

Mr. Baker was born November 5, 1862, in Baltimore, Md., and was a son of Chas. J. and Elizabeth Baker, of that city. In 1883 Mr. Baker married Miss Virginia McAden, of Charlotte, N. C. His present wife was Miss Minnie F. Tucker, of this city,

a daughter of Major and Mrs. Rufus S. Tucker, whom he married in 1902. He is also survived by two sons, Ashby Lee, Jr., and Julian Tucker Baker, eleven and nine years old, respectively.

Mr. Baker moved to Raleigh in 1893 and has been prominent in many of the social and business affairs of that city. At his death besides his mill interests, he was a director in the Commercial National Bank, president of the Commercial Building Company, president of the Carolina Country Club, and a member of the Capital Club and the Kiwanis Club.

Fear of Germany in Hosiery Trade.

In a review of knit goods conditions made for the members of the National Wholesale Dry Goods Association the demand for heather mixed hosiery is referred to, and it is pointed out that German hosiery of that character is a factor in the business. The letter says, among other things:

Full-fashioned hosiery is in better supply and production is improving. Heather mixed wool hosiery continues as an important factor at firm or strong prices. German hosiery sometimes stamped "Saxony," as the "country" of origin, is being offered and in some cases delivered at prices 20 per cent or 30 per cent below goods of American manufacture.

Cotton hosiery continues in good demand—a liberal supply of mercerized and lisle offerings from abroad are serving to further depress the American manufacturers who have not advanced their prices to the same extent as the advance in yarns, but who, nevertheless, find German prices much below their own.

Wholesalers are desirous of seeing some cold weather in order that sales of winter underwear may become more active and it is felt that a few weeks of cold weather will greatly deplete underwear stock on all hands. Spring, 1922, underwear by the wholesaler at prices based on orders placed in July and August is reported selling at low volume. Some manufacturers are beginning to consider fall, 1922, underwear both in woolen and cotton goods, but the trade is disposed to wait until after the end of the year before making commitments.

An inquiry made by the Association of the Managers of the Hosiery Department of many hosiery manufacturers reveals the following information: On the question of whether consumers wanted good underwear at a fair price or whether they wanted any kind of underwear they could buy at certain price levels, members said that while there had been a very strong demand for underwear at a low price, there was now a slight tendency toward good underwear at a fair price, although there had been a continued demand for goods at low prices with quality given second consideration.

Replying concerning the wholesalers' efforts to sell the better end of the line in addition to staples, members reported that while during the war period their sales of the better end of the line were heavy, they had been compelled to do a large

volume of business during 1921 on the lower end of the line, but there was a strong tendency toward better quality goods and that they, as department managers, were improving every opportunity to sell a good volume of better made goods in addition to the staples which constitute the major part of the business in knitted underwear. Another problem dealt with the question of whether or not spring, 1922, union suits to retail at \$1 constituted the bulk of the business and many replies indicated that the wholesaler is selling some lines of 1922 union suits which will retail at more than a dollar and that future orders on these are good. Replies to other questions indicate that the underwear department managers are making every aggressive and intelligent effort within their power to successfully market knitted and nainsook underwear and that these efforts are meeting with considerable success and inducing a large volume of business for the manufacturers whose product they distribute. While it has been necessary in this last season to place considerable emphasis on price and on sales service an increasing emphasis is being placed on the quality of merchandise and the service which it will give to the ultimate consumer. In short, all the replies received indicate intensive selling efforts backed by adequate stock, prompt shipment and an increasing emphasis on a good quality of serviceable merchandise.

Improvement in Belgian Textile Industry.

Belgian textile manufacturers have profited from the extended strike in the French textile industry located in Northern France, and have received orders which would

W. A. Woodruff Supt.
G. W. Andrews (Day), G. C. Bryant (Night) Asst. Supt.
J. R. Rainey (Day), W. C. Lane (Night) Carder
Lee Elerbee 2d Hand Carding
T. W. Webster (Day), J. W. Tinnerman (Night) Spinner
Frank Irwin 2d Hand Spinning
L. F. Scurry (Day), F. T. Dawkins (Night) Twister
Ed Whitten 2d Hand Twister
O. J. Booker (Day), H. H. Sears (Night) Weaver
S. E. Coalson 2d Hand Weaving
P. P. Plemons Head Fabric
G. E. Andrews Head Cable
Richard Hill Cloth Room
A. L. Sherwood Outside Foreman
S. J. Yancey Master Mechanic

MILL NEWS ITEMS OF IN

Montgomery, Ala. — The State Board of Control and Economy is offering for sale the Alabama Cotton Mills, located at Speigner, which have been operated by the State for some time. The mill has nine thousand spindles, and its own hydro-electric power plant. Included in the sale will also be 4,200 acres of improved land.

Gastonia, N. C. — The Groves Mills, Inc., spinners of high grade combed yarns in 36s to 50s reverse and 50s to 70s regular twist, announce that the Federal Sales Company, Inc., 80 Boylston street, Boston, have been appointed their sole sales representative in New England. Norman C. Nagle, treasurer, will be in active charge of the Groves interests.

Augusta, Ga. — The following announcement has been received by stockholders of the following mills: "The management of the Sibley Manufacturing Company, along with the management of Enterprise, Augusta Factory, Graniteville and Warren, are about to promote a plan of consolidation of these companies, to be passed upon and approved by their respective stockholders."

Forsyth, Ga. — The Forsyth Hosiery Mills have recently secured connections with the selling organizations of the Campe Corporation, 350 Broadway, New York City, as their exclusive selling agents. They are now specializing on high grade 240-needle ladies' hose and enjoying a successful business, and are expect-

E. S. DRAPER

CHARLOTTE

NORTH CAROLINA

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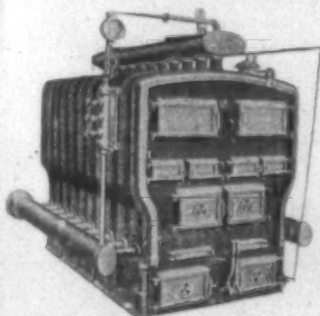
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Charlotte "Clean Quality" Leather Belting on your pulleys is insurance indeed against any belt trouble arising to upset your schedules.

Charlotte Leather Belting Co.
Charlotte, N. C.

down which was caused by a walk-out of operatives. The labor troubles have all been adjusted and it is understood most of the operatives are back at work. Demand for the mills' product is increasing though the trade is far from normal, officials say.

Craddock-Terry Co. Leases Two Plants of Jobbers Overall Co.

Lynchburg, Va. — Two of the three factory units in the former Jobbers' Overall Company plant have been leased by Craddock-Terry Company for five years from the creditors of the bankrupt concern. One unit will be opened January 1 for the factory office and for cutting uppers for the other Lynchburg factories. Machinery for the manufacture of welt shoes for women will be moved to the other unit, which will be in operation about April, 1922.

Between 500 and 600 employees will be added to the Craddock-Terry force and 100,000 square yards of floor space will be available when the two wings are occupied. The removal of the offices and cutting departments from other factories will give them additional room. No disposition has been made of the Martha Washington dormitory, nor have the creditors announced what will be the disposition of the third factory unit.

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—INC.—
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We sell WESTINGHOUSE Motors

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New Committee for South Carolina Cotton Manufacturers' Association.

Committees for the new year have just been appointed by James D. Hammett, of Anderson, president of the Cotton Manufacturers' Association of South Carolina.

The association's new executive committee is composed of the following: J. C. Plonk, Hickory, N. C.; T. M. Marchant, Greenville; R. E. Ligon, Anderson; Leroy Springs, Lancaster; James A. Chapman, Spartanburg, and E. F. Woodside, Greenville.

The chairmen of the other committees are as follows: bagging and ties, B. B. Gossett, Anderson; coal buying, John W. Arrington, Greenville; cotton rules, J. C. Evins, Spartanburg; entertainment, H. A. Ligon, Spartanburg; exports, Aug. W. Smith, Greenville; traffic, E. A. Smyth, Greenville; welfare work, Allen J. Graham, Greenville; relations with neighboring associations, W. S. Montgomery, Spartanburg; selling agencies, George W. Summer, Newberry; cost accounting, Emslie Nicholson, Union; mill supplies, W. C. Hamrick, Gaffney; waste, J. P. Gossett, Williamston; zone systems, V. M. Montgomery, Spartanburg; electric power (purchased), J. C. Self, Greenwood; immigration, Alfred Moore, Tucaupau; insurance, B. E. Geer, Greenville; legislation, A. F. McKissick, Greenville; membership, John A. Law, Spartanburg; resolutions, Lewis D. Blake, Belton; taxation, W. E. Beattie, Greenville; education, Alex Long, Rock Hill.

A. F. McKissick, of Greenville, is vice-president of the association and Robert W. Sullivan, of Anderson.

Adjust Plans of Power Company.

Spartanburg, S. C.—A meeting was held in the Cleveland Hotel Tuesday morning of representatives of mills having contracts with the South Carolina Light, Power and Railways Company, for the purpose

of considering action to be taken in connection with the proposed adjustment of the company's affairs. Those present represented the following mills:

Broad River Mills, Clifton Manufacturing Company, Globe Manufacturing Company, W. S. Gray Cotton Mills, Hamrick Mills, Inman Mills, Musgrove Mills, Pacolet Manufacturing Company, Spartanburg Cotton Mills, Valley Falls Manufacturing Company, Woodruff Cotton Mills, International Agricultural Corporation, Virginia-Carolina Chemical Company, Limestone Mills. There was also present George B. Tripp, the receiver, and Attorney Henry Earle, representing the bondholders.

The bondholders have consented to accept five-year script for their back interest, thus avoiding foreclosure and furnishing the company with funds with which to make needed improvements that will enable more economic operations. The offer is conditioned on the general creditors accepting script for their claims, the power users agreeing to modify their contracts—continuing present rates for three years and thereafter arbitrating rates every three years—and the city of Spar-

tanburg to agree to establish fair rates and relieve the company of unnecessary burdens.

Knit Goods Output in October 87 Per Cent Normal.

According to the monthly production report for October issued by the Knit Goods Manufacturers of America, the output of winter and summer underwear by the 56 reporting mills was 675,205 dozen, or 87.26 per cent of normal, which is 773,776 dozen. These figures represent loss during the month of about 98,500. The report of the association also shows that the production during September was 84.4 per cent of normal, or about 3.3 per cent below the October, 1921, figures. The October, 1920, production was 50.4 per cent of normal, or about 42.2 per cent less than the output last month.

The manufacture of winter underwear during October was 88.1 per cent of normal, the output being 434,902 dozen by the 45 reporting factories. The production of summer goods during the same month was 240,303 dozen by the 28 reporting firms, which was 85.81 per cent of normal.

In the case of misses' winter union

suits, the output was 34,304 dozen, or 101 per cent of normal, and of summer women's two-piece the output was 82,476 dozen, or 115.59 per cent of normal.

The lowest figures were summer boys' two-piece at 18.6 per cent of normal, 127 dozen, and the winter men's two-piece at 80.46 per cent of normal, 83,552 dozen.

The value of exports of cotton underwear during October was \$280,735, and for 10 months ending with that month was \$2,816,169.

All Lancashire Not to Adopt Short-Time.

Manchester, Eng.—The proposal to reduce production by 50 per cent in the American section of Lancashire Mills failed to receive the requisite 80 per cent support in the ballot of the Master Spinners' Federation. No further action will be taken, it is stated. One hundred and twenty thousand operative spinners are affected by the result, which means that the mills will continue on full time.

Pamphlet on "Steam Turbine and Alternator Units."

The Allis-Chalmers Manufacturing Company has just issued a new bulletin No. 119 in their publication series on "Steam Turbine and Alternator Units," covering high pressure condensing units of 1,500 and 1,800 revolutions per minute.

This book covers the subject in a thoroughly practical and complete manner and will be of much interest to any one who is concerned with the operations of units of this character. It contains 54 pages and is profusely illustrated, both drawings and photographs being used to illustrate in detail the operation of the units under discussion. As a whole the book is a very valuable treatise on the subject of turbine and alternator units and will doubtless be received with much appreciation.

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GREENVILLE, S. C.

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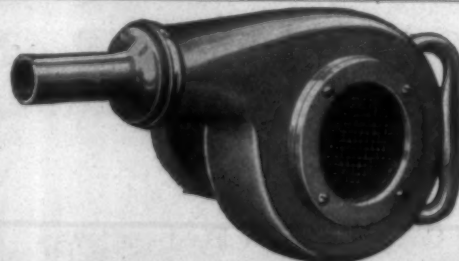
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Weight six pounds.
Attach to any light socket.
Universal motor. Any voltage, 110 to 250.
20 feet cord and connections.
For cleaning motors, generators, etc.; for blowing lint and dust from textile machinery.

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must be one that for simplicity with great capacity and economy in maintenance produces uniformly such conditions that may be determined for the different requirements of the work. In the American Moistening Company's method of humidifying, all such requirements are GUARANTEED.

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Plans for Aiding Textile Export Trade.

Edward T. Pickard, chief of the textile division of the Department of Commerce, in discussing the activities of his division in the department's magazine, Commerce Reports, outlines 18 classifications under which the needs of the industry are being met.

Mr. Pickard points out the importance of American foreign trade in textiles and says that the range of operations of the division is broadening daily. The article reads as follows:

"The importance of textiles in relation to American foreign commerce is shown in a striking manner in the volume of export and import products falling within the scope of the textile division," says Mr. Pickard. "During the calendar year 1920, abnormal as was the foreign commerce of the United States, the aggregate value of textile exports and imports was close to \$3,000,000,000 out of a total for all commodities of \$13,360,000,000.

"There have been unusual movements in the shipment abroad of materials to relieve destitute and stricken territories, while regular takings of textile necessities have suffered because of reduced purchasing power. The adjustment of this situation would tend to further increase the volume of commodities coming within the purview of the textile division.

"The textile division, recently organized in the Bureau of Foreign and Domestic Commerce, places the

resources of the United States Government at the disposal of the industry, thus recognizing its large importance in the national welfare. The division interests itself in all foreign trade problems arising in the industry—import as well as export. The chief aspects receiving attention fall under the following classifications:

1. Raw cotton:
 - (a) Linters.
 - (b) Waste.
 - (c) Yarns.
 - (d) Knit goods—
 1. Underwear.
 2. Hosiery.
 - (e) Napped goods.
 - (f) Piece Goods.
 - (g) Towels.
 - (h) Tread.
 - (i) Wearing apparel.
2. Raw wool:
 - (a) Rags.
 - (b) Woolen and worsted yarns.
 - (c) Woolen and worsted piece goods.
 - (d) Blankets.
 - (e) Wearing apparel.
3. Raw silk:
 - (a) Waste.
 - (b) Spun silk.
 - (c) Fabrics.
 - (d) Wearing apparel.
 - (e) Artificial silk.
4. Miscellaneous fibers:
 - (a) Flax and products.
 - (b) Hemp and products.
 - (c) Jute and products.
 - (d) Sisal and products.
 - (e) Other fibers and products.
5. Furs and products.
6. Hair and products.
7. Artificial leather and products.

"There are other items not included in the above list, but sufficient is given to indicate the general scope.

"The staff designed to handle this work is adequate in training and actual commercial experience. In addition to the chief and his assistant, both of whom have had long business experience in textiles with special reference to foreign market aspects, there will be several assistants, each giving supervision to particular classes of materials and undertaking various phases of the work. There will be one, for instance, in charge of wool, another of cotton, still another of miscellaneous fibers, while a research assistant will devote his time to studying the various problems and perplexities encountered by the merchant in the conduct of his foreign trade. Another assistant will give his especial attention to the interpretive and analytical aspects of statistical data. Clerks and stenographers necessary to secure effective results for the work as outlined will be provided.

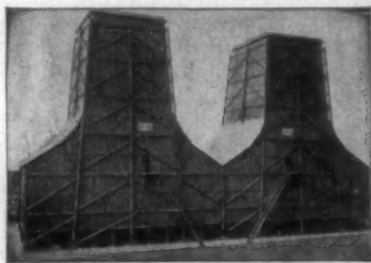
"To bring the resources of the Government to the knowledge of the different branches of the industry and to accomplish the purposes in mind various committees have been formed to co-operate with the textile division. Individual questions and perplexities will receive the utmost consideration, but it has been deemed most effective to treat questions of broad policy and of general interest through the medium of the different trade associations and their committees. Such committees have already been appointed by the

following associations: National Association of Cotton Manufacturers, Boston; National Association of Wool Manufacturers, Boston; American Cotton Manufacturers' Association, Charlotte; the Knit Goods Manufacturers of America, Utica; American Association of Woolen and Worsted Manufacturers, New York; Jute Manufacturers' Association of America, New York; Cordage Institute, New York.

"Among other bodies having the organization of such committees in process are: International Association of Garment Manufacturers, New York; National Wholesale Dry Goods Association, Philadelphia; National Knitted Outerwear Association, New York; Texas Cotton Association, Waco.

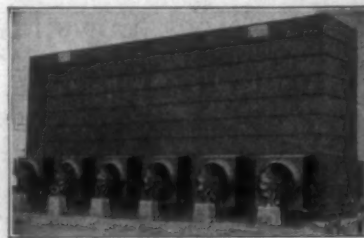
"The textile division is organized to meet the needs of the industry, and its activities will therefore be shaped largely according to the expressed needs of those concerned. The range of operations is broadening daily. Briefly, however, the work may be classified as follows:

- "1. Ascertaining the requirements of the industry through foreign trade committees and individual communications.
- "2. Securing the kind and character of information desired by the trade from American commercial attaches, trade commissioners, and consular officers abroad.
- "3. Disseminating such information through the medium of—
 - (a) Commerce Reports.
 - (b) Confidential circulars.
 - (c) Press and magazines.
 - (d) Letters and telegrams.



WHEELER-BALCKE COOLING TOWERS
NATURAL DRAFT TYPE

Are made of wood, the outer frame being of long leaf yellow pine; the sheathing and filling being of high grade cypress. A chimney creates a strong natural draft which draws the air through the water-cooling system, with a minimum loss by friction. Bulletin No. 109 describes and illustrates this type of tower.



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Adapted for cooling condensing water where space is limited. These towers are built up of steel plates, and the cooling surface, over which the water falls in thin films, is composed of woven wire mats. Specially designed efficient fans force the air up between the mats. The physics of water cooling and the Wheeler-Barnard Tower are covered in Bulletin No. 104.

Other Wheeler Products Include:

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Wheeler-Edwards Patent Suction-Valveless Air Pumps

Wheeler Centrifugal Pumps
Wheeler Vertical Engines
Wheeler-Barnard Forced Draft Cooling Towers
Wheeler-Balcke Natural Draft Cooling Towers
Wheeler Feed-Water Heaters
Wheeler Vacuum Pans and Multiple Effects
Wheeler Exhaust Relief Valves
Wheeler Improved Re-Heaters and Receivers
Wheeler Improved Packing for Condensers

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DeLaval Steam Turbine Co.
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Condensers and Cooling Towers
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SALES ENGINEER
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Triplex and Deep Well Pumps
Rumsey Pump Co.
Seneca Falls, N. Y.

- (e) Personal interviews.
- (f) Special handbooks, manuals, and reports.
- (g) Public discussions at association meetings.
- (h) Special committees appointed by trade organizations.

"4. Conducting investigations on textile subjects in new and important markets.

"5. Conducting special researches on textile subjects of immediate interest to the industry.

"6. Assembling and interpreting textile statistical data covering foreign commerce of the United States and other countries.

"7. Advising with other branches of the Government, such as Congress, the Tariff Commission, Federal Trade Commission, Interstate Commerce Commission, Bureau of Census, various purchasing departments, and surplus material divisions with reference to protecting the interests of both the Government and the industry.

"8. In consultation with the Bureau of Census and other Government agencies revising classifications and schedules so as to make them serve more closely the purposes of the Government and the industry.

"9. Representing and protecting the industry in foreign markets in the maintenance of its rightful interests.

"10. Making available to the industry lists of merchants, dealers, agents, manufacturers, and other classes doing business in foreign markets.

"1. Through co-operation with the

divisions of foreign tariffs, commercial law, and commercial intelligence, and the regional divisions, making available to the industry essential information and changes concerning:

(a) Foreign tariff matters.

(b) Copyright regulations.

(c) Trademark regulations.

(d) Commercial laws.

(e) Arbitration provisions.

(f) Economic and industrial studies of important geographical divisions of the world.

"12. Making price comparisons of particular commodities produced in different foreign manufacturing centers.

"13. Keeping the industry advised of important activities affecting textiles in the United States or foreign countries.

"14. Co-operation with the Bureau of Standards, conducting technical and scientific investigations in particular classes of textiles and working for the adoption of certain desirable standards.

"15. In co-operation with the statistical division preparing more suitable and timely statistical figures on the exports and imports of textiles, showing countries of origin and destination. Desirable tables will be submitted to interested sections of the industry a few weeks after the end of the month which they are designed to cover.

"16. Consultation with business men now engaged in, entering upon, or expanding their foreign trade is invited. The complete records and previous experience of the Bureau of Foreign and Domestic Commerce

are at their disposal and the disinterested advice and opinion of experts in all departments of foreign trade is available without cost. Export managers, salesmen, or merchants contemplating trips abroad will be advised on all subjects ranging from the cost of living in various localities, transportation costs, and routes to the best methods of securing successful results from their missions.

"17. Trade commissioners have been and will be sent abroad to study textile markets, making collections of samples representing cloths normally consumed in certain territories and these samples are and will be available for inspection by interested merchants. Samples usually indicate in detail the country of origin, purchase price, construction, and any peculiarities in merchandising.

"18. From time to time the division chief appears before trade organizations to acquaint them with the latest results of the department's operations and to consult with them respecting new or modified activities. When desirable the textile division maintains a booth at exhibitions or conventions where bureau publications are displayed, samples of cloths secured from the world's markets are placed on view for inspection, and merchants may consult with the division's representatives.

"There will be, of course, many more activities undertaken from time to time, and the above outline is accordingly subject to considerable expansion or modification."

D. R. Markham is Field Agent for North Carolina Child Labor Commission.

D. R. Markham has been employed as field agent of the North Carolina Child Welfare Commission to assist in carrying out the program of work inaugurated. In this capacity Mr. Markham will assist E. F. Carter, executive officer, in checking up child labor in the State, inspection of business and industrial places, etc., as provided for in the creation of the commission. This is in line with the action of the last General Assembly in providing for the usefulness of the commission in the prosecution of the work. Mr. Markham has had about four years of experience with one of the largest tobacco companies, also connection with Y. M. C. A. work, and comes highly endorsed by leading business men.

Request for Larger Cotton Goods Imports Into Hungary.

The textile merchants of Budapest have requested the Ministry of Commerce to allow an increase in the amount of cotton goods imported into Hungary, according to a recent report from the American mission at Budapest. These merchants claim that the 2,000,000 meters which the Government has fixed as the maximum amount which can be imported is insufficient, and will result in higher prices and hardships to the merchants.—Commerce Report.

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ATLANTA, GA.

Community Fair at Pomona Mills.

The second annual community fair of the Pomona Mills, Pomona, N. C., was a decided success in every way. The exhibits shown were very creditable and the program arranged for the entertainment of the visitors was unusually good from start to finish. A large number of people attended the fair. The opening address was by J. E. Latham, of Greensboro.

Between times the prizes were awarded, several band concerts were held, the Boy Scouts gave an exhibition of their prowess, 29 babies were judged by Mrs. Dorothy Hayden, county health nurse, the various fraternal organizations gave demonstrations, and all in all everybody in Pomona had a great time throughout the day.

The baby contest was perhaps the most interesting event of the day to the women of the village, although there was quite a lot of interest displayed in the exhibitions of needlework, home cooking, and canned goods.

The best baby under one year of age to be entered in the baby contest was Ruth Roberts, the daughter of Mr. and Mrs. Henry Roberts. The nearest perfect baby between one and two years of age was Helen Fox, the daughter of Mr. and Mrs. J. W. Fox. For the most improvement in the past few months Annie Ward, daughter of Mr. and Mrs. C. Z. Ward, won first prize, James Hansel, son of Mr. and Mrs. L. W. Hansel, winning second prize.

Many prizes were awarded for the various exhibits on display in the cooking and needlework departments. Miss Minnie Jamison, of the North Carolina College for Women, being the judge for these two departments.

First prize winners for canned goods were Mesdames J. C. Wright, Millard Jones, A. H. Edwards, J. L. Green, Addie Burgess, Angie Brown, Tom Bain, Charles Tesh, Kelly Latham, O. W. Duke, John Henderson, Charles Bain and Claude Swiggott. First prizes for culinary skill were awarded to Mesdames Lloyd Thom-

as, Angie Brown, O. W. Duke, Madge Brown, C. M. Harris, R. E. Jones, W. D. Newell, J. C. Wright and Misses Vivian Henderson and Louise Edwards. Mrs. Charles Bain won first prize for the best exhibition of cut flowers.

There were many articles of needlework on display and some trouble was met in deciding to whom the awards should go in this department. The prizes were finally given to the following contestants: Mrs. O. W. Duke, Mrs. Angie Brown, Miss Marie Holliday, Miss Grace Bivins, Mrs. Arnold Brown, Mrs. L. W. Hansel, Mrs. Lloyd Thomas, Mrs. J. W. Goodro, Mrs. Charles Bain, Mrs. Henry Roberts, Mrs. A. H. Edwards, Mrs. C. N. Harris, and Mrs. Tom Bain. For the best exhibition of needlework by girls under 14 years of age prizes were awarded to the following: Myrtle Newell, Gay Nell Perry, Josephine Green and Gertrude Roberts.

J. C. Wright won the prize for the best cow entered and W. D. Newell's hog was declared the premier porker. Miss Doris Iddinger's Anandas, John Seagraves' Plymouth Rocks, and Miss Edna McCall's

BAKER GUNS

For fifty years known to the trade as the best for service.



\$48.00 to \$385.00

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Spartan Sizing Compound Co.

WITHERPSOON & WITHERSPOON,

SPARTANBURG, S. C.

Manufacturers of
Spartan Compounds,
Tallows and Gums

REMEDYING DYEHOUSE TROUBLES

(Continued From Page 12)

and some of the dyes are very similar in some respects to those of calcium and magnesium. It is the source of much trouble to bleachers when it impregnates the goods or is deposited on them, causing them to become yellowish and spotted.

4. *Acid Impurities:* In swampy regions when the surface water seeps through "sour" mud and muck it becomes slightly acid. This type water has a bad effect on soaps, causing gummy particles to appear and destroying the sudsing value. It can be remedied by small additions of soda ash.

WATER PURIFYING PLANTS

Any mill using water extensively will do well to investigate the matter of a purifying system. There are various types of installation made in

this country among which might be mentioned: The Permutit System, The Refinite System, and the Hungerford & Terry, Inc's System.

There is considerable difference between these various systems and also a difference between the desired results from a purifying system.

For "city" use merely a clear water that is free of harmful bacteria is usually the satisfactory. But for industrial purposes this is not true. In this case a water is required that is not only clear, but one that is free of the purifying chemicals such as alum and soda.

Frequently the ordinary municipal water supply is not at all suitable for special industrial purposes. Therefore, as stated above, it would be well worth the time of the mill owner to investigate each of the three aforementioned systems.

Rhode Island Reds won the poultry prizes.

During the afternoon refreshments were served by the Busy Bee Club, a club of little girls who attend the Pomona school. These little girls also had an imposing display of posters which were designed and drawn by the students. The Hunter Club, composed of women of the village, served supper that night.

The Boy Scout demonstration was held in the Junior Hall at 2:30 o'clock yesterday afternoon, W. A. Hewitt, president. After the oath of allegiance had been recited and the scouts had demonstrated some of their activities both Mr. Hewitt and Mr. Denny made short addresses.

Following the band concert held at 3:30 o'clock the various fraternal organizations held a short program. Representatives of the Juniors, the Red Men, the Daughters of Liberty, and of the Mothers' Circle spoke. Mrs. O. W. Duke represented the Mothers' Circle. John Henderson spoke for the Red Men, and L. D. Mendenhall delivered an address for the Juniors.

The day closed with a big minstrel in which the fire-eating act of A. C. Mann, the rapid-fire comedy of O. W. Duke, Clint Jones and the Tilley brothers were the features.

Plans are already under way at Pomona for a fair to be held next year and the people are determined that the third annual community fair shall be even larger than the one held recently, even though they are quite satisfied with the success of the event.

B. B. Comer Seeks Lower Freight Rate on Cotton.

B. B. Comer, vice-president of the Avondale chain of mills, of Birmingham, Ala., is making efforts to get the cotton manufacturers and business men of the South generally interested in taking united action looking toward a reduction of freight rates on cotton. Mr. Comer is a member of a committee that has succeeded in getting a freight rate in Alabama, through the Public Service Commission on cotton that is on a basis of the old pre-war rates, plus two 25 per cent advances. This makes the rate in Alabama today considerably less than the higher rates established by the railroads during the war.

Mr. Comer believes that the question of freight rates on cotton is of great importance, not only to the cotton manufacturers, but to the South as a whole. All Southern people are either directly or indirectly interested in cotton and the prosperity of the South depends to a large extent on the prosperity of the cotton grower. It is greatly to the influence of the cotton manufacturer to help the cotton planter secure equitable cotton rates on his product.

Alabama has led the way, Mr. Comer states, in securing the same basis of rates for cotton today as were applied to other commodities in order to produce the war revenue for the railroads. Unless Georgia and the Carolinas follow promptly by a request for the same consideration, then the advantage gained in Alabama will be lost and Alabama

will in turn lose its rates and will have to go back to the high schedule, he says.

Mr. Comer is now urging cotton manufacturers in all parts of the South to co-operate in the movement for lower cotton freight rates. He has taken the matter up with the American Cotton Manufacturers' Association and hopes to secure active and timely aid from that body. He is also interesting Southern members of Congress in the fight

and is hopeful of a large support from those whom he is seeking to interest.

Adelaide Mills.

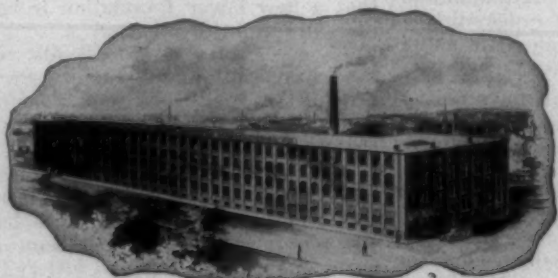
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Walter Weeks Spinner
Tom Carter.....2d Hand Spinning



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Literature upon request

**Resumption of Mill Building Predicted**

(Continued from Page 7).

North Carolina as a manufacturing State.

Cotton mill men say that the industry's rapid development in this section as compared with the development in New England is very easily explained. In addition to the availability of the cheap and convenient electric power this section has a distinct advantage in climatic conditions and particularly in the personnel of cotton mill workers and living conditions in cotton mill communities.

The workers in Southern cotton mills are native Americans, with American ideals and characteristics. They are individualistic and ambitious. Many of the leading men in the industry today began their career on the bottom rung and cotton mill workers today know that the opportunity for advancement is probably greater now than it ever has been because the rate of development constantly demands efficiently trained executives.

Unsold Commission Stock is Called a Yarn Feature.

New Bedford—Frederick B. Macy & Co., of this city, say in their weekly yarn letter: "The toboggan in the cotton yarn market seems to have slackened speed very considerably during the past week and prices in almost all quarters have held more firmly than for some weeks past. The sharp recovery in raw cotton values may have had something to do with the stiffer attitude of spinners, but there are not a few traders who profess to see in this development good indication that the bottom for some time to come has been touched."

"Inquiry has seemed more active than for several weeks and some operators have in mind purchases of considerable quantities if they can secure satisfactory price quotations. A great many yarn consumers are frank in confessing that they have no large unused stocks of yarn on hand and must buy soon, but are determined to go into the new year with inventories down to the irreducible minimum, and therefore are buying just now only from hand to mouth. As soon as the turn of the year is passed it is believed there will be very sizable business coming from such quarters. Part of the inquiry already current is undoubtedly the reflection of a quickening of buying interest, though little actual dealing has taken place."

"The one soft spot in the situation is the stocks of unsold yarn held by some of the commission houses. This applies particularly to carded yarn, and prices on such varieties have been badly undermined by offers of commission house spots several cents a pound below what the spinner himself quotes. It will require a week or two of buying interest to clean up such second hand offerings and put the market into shape for spinners' sales."

"Combed yarns have had no such difficulty to contend with and have held pretty steady throughout the past week. Spinners practically have

their backs against the wall so far as price is concerned, but some of them are so badly in need of orders that they are inclined to make slight concessions to meet a firm bid, even though that might mean accepting an under cost price rather than close down their machinery."

"Weaving mills have furnished most of the actual inquiry of the week, although there is still a live interest in the thread trade as to yarn prices, and buying is likely to start at any time. Knitters have been out of the market and so have the tire fabric mills, but braiders are moderately active, though buying yarn only in small quantity."

"The slackening in activity in the cloth markets has enabled some of the cloth mills to turn part of their equipment onto yarn for outside customers, and this is the only bearish feature in the combed yarn outlook."

Consumer Shows Little Interest.

In the market service letter of the National Wholesale Dry Goods Association, it is stated that conservative market authorities regard the larger crop figures as containing elements of good in so far as they will serve to keep cotton from going so high as to disturb confidence. The importance of the increased crop figures is considered to be chiefly a sentimental one and few deny the fact of a short crop of poor quality—premiums being paid for long staple. The consumer as usual shows little or no interest in cotton crop conditions and in view of the general downward tendency of prices generally is inclined to resist and resist paying higher prices when he knows it. Wholesalers report slower buying by retailers after the first blush of willing buying after the small crop report.

Many merchants discussing the state of calm prevailing in primary markets concede that the general desire on the part of wholesale and retail merchants to go out of their inventory year with a minimum amount of merchandise on hand is responsible for the lack of interest in purchasing now. The market activity of the past several months in cotton piece goods appears to have been greater than in other lines of industry, and the price movement also appears to have gone higher than it should have with the result that a new lower foundation is being "probed" for so that a sound basis may again be found for renewed operation. Percales were priced 1½¢ per yard over former price on 64-60s and are selling moderately.

The percale printers, following their offering of merchandise early in November on a higher price basis, report that there has been a sufficient number of small orders to take up their product for five or six weeks, and that they may desire to defer reaching any decision reflecting the gray goods market until later on. Naturally, as sellers, they are inclined to the hope that gray goods prices may have strengthened and that their last price may be continued.

Superintendents and Overseers.

We wish to obtain a complete list of the superintendents and overseers of every cotton mill in the South. Please fill in the blank below and send it to us. We would also be glad to have you include any recent changes in overseers and superintendents.

.....192

Name of Mill.....

Town

..... Superintendent

..... Assistant Superintendent

..... Carder

..... Second Hand Carding

..... Spinner

..... Second Hand Spinning

..... Slasher

..... Warper

..... Weaver

..... Second Hand Weaving

..... Loom Fixer

..... Loom Fixer

..... Loom Fixer

..... Loom Fixer

..... Cloth Room

..... Shipping Clerk

..... Dyer

..... Outside Foreman

..... Master Mechanic

..... Cotton Grader

Recent changes.....

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Cotton Goods

New York—Cotton goods were slightly higher and firmer as the week closed. Print cloth prices, after dropping to a basis of 8½ cents, advanced a quarter cent on Wednesday and some orders were placing running into next year. Sheetings remained quiet and irregular, while there was little change in colored cottons. Percales and prints were rather quiet throughout the week, although a few sales of fancy print for future delivery were noted.

Mills continue to complain of the decreasing margins between cotton and cloth prices and some curtailment is reported in gray cloth mills where orders have run out. There appears to be no surplus of goods in any quarter and it has developed that when firm orders are paid down by large users higher prices result quickly if the buying is pressed. Cotton duck is quiet and there has been no material change in tire fabrics or auto supply goods. Silk and cotton goods are quiet. Silk hosiery has sold much better than cotton hosiery for spring.

It was a quieter day in cloths. The Wednesday business had led to high hopes of a spurt that might carry to the end of the month. The drop in raw cotton at the opening of exchange trading seemed to lessen confidence.

Prices showed no change for the day, and the limited sales heard of were on a basis of 8½c for 38½-inch 64x60s and 9½c for 68x72s. There was some inquiry for odd goods, and it was stated that a little business was done in narrow fabrics.

The situation in sheetings was not materially changed. First hands quoted 7½ cents, net, for 31-inch, 5.00 yard; with reports of one-quarter less in second hands. There were various stories heard in connection with 36-inch, 5.50 yard, with 7½ cents, net, being the only definite price known. Limited trading in 36-inch, 5.00 yard, at 8 cents, net, was reported; 10 cents, with terms, the last heard on 56x60, 4.00 yard; 9½ cents, net, for 37-inch, 48 squares, 4.00 yard; 8½ cents, net, for 4.70 yard. Some 36-inch, 40 squares, 6.14 yard, sold at 6¼ cents, net, on Wednesday.

In 40-inch 2.85 yard, 12 cents, with terms, was reported. For 40-inch, 2.50 yard, several claimed they had been unable to do better than 13½ cents, net, though fair business was said to have been put through at "even money" on Wednesday. It was stated that 10 cents, net, had to be paid for limited quantities of 40-inch 3.75 yard.

Domestics have been very quiet this week and there has been very little doing in prints and percales. The wash goods departments are seasonably quiet on spot goods and less active on futures.

The demand for blankets and other fall goods is quite as good as might be reasonably expected in view of the troublesome conditions

in retail sales in different parts of the country. Buyers come in almost every day for additional quantities, but cannot be interested merely because any line seems cheap.

Dress goods are selling better for spring delivery than for spot use. Silks have been doing rather better and there is more confidence expressed by jobbers concerning spring prospects. Carpet and rug departments are looking up and floor covering departments in general show a larger degree of activity than for some time, principally on lines for future shipment.

The Fall River goods market has been rather quiet all this week, more quiet than just the occurrence of a holiday would explain. Notwithstanding the advancing cotton market cloth buyers buying most of the week have been indifferent traders. Bidding of a somewhat lively character developed during Wednesday, but the buyers usually wanted goods at prices which manufacturers here would not consider. Following the holiday the inquiry was again light.

In the print cloth division a small, moderate amount of trading was done in 38½-inch, 64x60s at 8c, with deliveries to run through the next three or four months. Thirty-six-inch low count goods have been in fair request at practically unchanged prices as compared to last week's prices. Narrow goods in both printers' and converters' styles have been dull.

The fine goods division has been generally quiet and fairly steady and firm. Some trading by second hands has been reported from outside at prices which Fall River and New Bedford fine cotton manufacturers would not consider.

Cotton goods prices were quoted on Saturday as follows:

Print cloths, 28-in., 64x64s..	6%
Print cloths, 28-in., 64x60s..	6%
Print cloths, 27-in., 64x60s..	5%
Gray goods, 38½-in., 64x64s..	9
Gray goods, 39-in., 80x80s...	12%
Gray goods, 39-in., 68x72s...	9%
Brown sheetings, 3-yard....	10½
Brown sheetings, 4-yard....	10
Brown sheetings, Southern standard	12
Tickings, 8-ounce	28
Denims, 2.20	19½
Staple gingham	14½
Dress gingham	20a22½
Standard prints	11
Kid finished cambrics.....	10a11

New Product for Hanes Mill.

The Hanes Knitting Company, Winston-Salem, N. C., is putting a new product on the market this season, an athletic union suit for boys and girls up to 12 years and for boys over 12. The Hanes Company put their first athletic union suits for men on the market last spring and they were a success, a steady demand for them being reported all through the summer.

The Yarn Market

Philadelphia, Pa.—Business in the yarn market was light during the week, inquiry being small and mostly only for feeling out purposes. The break caused by the holiday did not help any. Manufacturers are apparently still running on cheap yarn and there has been no influx of new business to cover their future needs. There is, however, a general expectation that both weavers and knitters will have to come in the market soon for the yarns that they will need after the first of the year.

The general price list changed but little during the week and the market has held very steadily in view of the unfavorable circumstances. The higher price for cotton toward the end of the week enabled spinners to remain firm in their prices, and while some of them were inclined to meet slight concessions, they would not compete with the small scattered sales of stock yarns from second hands.

Reports in this market indicate that spinners, both in the North and South, have become more disturbed over the situation during the past ten days, but it is also true that business has not come to a standstill yet. The day to day amount of business that is coming through is not very large, but they indicate that buying has not altogether stopped.

Opinions differ as to just what is causing the dull market. Whatever else may be wrong, it seems to be an established fact now that buyers are not operating except where they can get concessions and that they

are not inclined to any purchases that are not actually needed to cover orders they have on hand. Southern reports state that the mill men have not lost confidence and that there is a general feeling that a new spurt in buying will be evident during the next few weeks. Yarn users who have stayed out of the market will have to have further supplies within a short time and it is a general opinion that it is only a question of a short while until the market becomes much more active than it is now.

Prices in this market on Saturday were quoted as follows:

Southern Two-Ply Warps.			
8s	30	@31	20s.....35 @36
10s	31	@32	24s.....36 @37
12s	32	@33	26s.....37 @38
14s	33	@34	30s.....38 @40
16s	34	@35	40s.....55 @58

Southern Single Warps.			
8s	30	@31	20s.....35 @36
10s	31	@32	24s.....36 @37
12s	31½	@32½	26s.....37 @38
14s	32	@33	30s.....38 @40
16s	33	@34	40s.....55 @58

Southern Two-Ply Skeins.			
8s	30	@31	20s.....34 @35
10s	30½	@31½	24s.....35 @36
12s	31	@32	26s.....36 @37
14s	31½	@32½	30s.....38 @40
16s	32	@33	40s.....55 @58

Southern Single Skeins.			
8s	29	@30	20s.....34 @35
10s	29½	@30½	24s.....35 @36
12s	30	@31	26s.....36 @37
14s	31	@32	30s.....38 @40
16s	32	@33	40s.....55 @58

Southern Frame Cones.			
8s	30	@31	20s.....34 @35
10s	31	@32	22s.....34½ @35½
12s	32	@33	24s.....35 @36
14s	32½	@33½	26s.....36 @37
16s	33	@34	30s.....37 @39
18s	33½	@34½	40s.....55 @58

Eastern Carded Cones.			
10s	34	@35	20s.....39 @40
12s	35	@36	24s.....42 @43
14s	36	@37	26s.....44 @45
16s	37	@38	30s.....47 @48
18s	38	@39	40s.....60 @62

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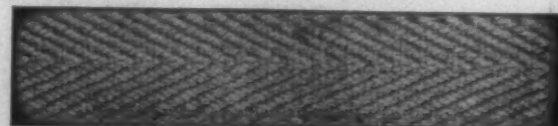
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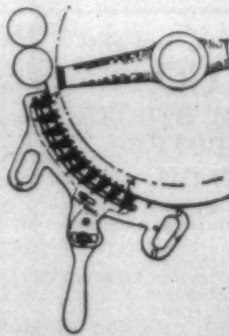
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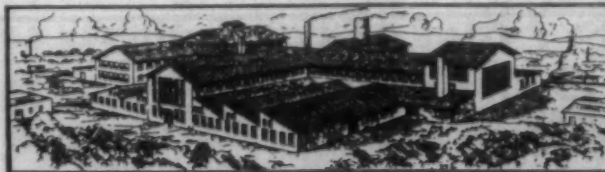


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If the applicant is a subscriber to the Southern Textile Bulletin and his subscription is paid up to the date of his joining the employment bureau the above fee is only \$1.00.

During the three months' membership we send the applicant notices of all vacancies in the position which he desires.

We do not guarantee to place every man who joins our employment bureau, but we do give them the best service of any employment bureau connected with the Southern Textile Industry.

WANT position as superintendent. Now employed in large mill and giving satisfaction, but would like to change. Excellent references. Address No. 3275.

WANT position as superintendent, or would accept position as overseer of carding in well paying mill. Now employed, but wish larger place. Long practical experience and can get results. Address No. 3276.

WANT position as carder, spinner, or overseer of carding and spinning. Have had over 20 years' experience in the mill and have satisfactorily handled many large jobs. Now employed. Excellent references. Address No. 3277.

WANT position as superintendent in mill of 10,000 to 50,000 spindles. Now have place as superintendent of medium size yarn mill, but wish larger job. Can guarantee quality and quantity production. Prefer to locate in Georgia. Best of references showing long experience and character and ability. Address No. 3278.

WANT position as superintendent of small mill, or overseer of spinning and twisting in large mill. Can come on short notice and will gladly furnish references showing my ability to handle the work satisfactorily. Address No. 3279.

WANT position as overseer of carding or spinning, or both. Now employed in successful mill, but wish to change for larger place. Experienced, sober and reliable. Good references. Address No. 3280.

WANT position as master mechanic and engineer. Thoroughly equipped by training and experience to handle work in competent manner. Am especially qualified for electrical plants. Good references. Address No. 3281.

WANT position as overseer of weaving, either plain or fancy goods. Have had long experience in excellent mills and can give satisfaction. Good reference as to character and ability. Address No. 3282.

WANT position as overseer of weaving, or would take place as overseer of cloth room. Am practical man who has had long experience on both plain and automatic looms and can produce quality and quantity. Excellent references. Address No. 3283.

WANT position as superintendent, or would take a job as overseer of carding, or spinning, or both. Prefer mill in Georgia or Alabama. Now employed and giving entire satisfaction, but have good reasons for wishing to change. Fine references. Address No. 3284.

WANT position as overseer of spinning. Have had 20 years experience in spinning rooms and thoroughly understand all processes. Now employed. Good references and can come on short notice. Address No. 3285.

WANT position as superintendent. Am 32 years old, married, strictly sober; have had 22 years experience in spinning and have completed I. C. S. course in cotton carding and spinning. Best of references. Address No. 3286.

WANT position as superintendent. Can handle either yarn or weave mill, carded or combed work. Married, strictly sober, know how to handle help and overseers. Can furnish best references from past and present employers. Address No. 3287.

WANT position as overseer of weaving in small mill, or second hand in large mill, or as designer. Am 33 years old and have had 15 years experience in plain and fancy weaving. Excellent references. Address No. 3288.

WANT position as overseer of carding in large mill, or carder and spinner in small plant. Can furnish satisfactory

references as to ability and character. Good manager of help, long practical experience. Address No. 3289.

WANT position as superintendent, or overseer of carding, or spinning, or overseer of carding and spinning. Now employed at good mill and giving satisfaction, but wish larger place. Competent, reliable and experienced. Good references. Address No. 3290.

WANT position as overseer of weaving, slashing, warping or cloth room. Have held positions in several of the best mills in the Carolinas and always given satisfaction. Thoroughly competent to handle large or small job, or any class of goods. Best of references. Address No. 3291.

WANT position as overseer of weaving. Now employed, but wish to change. Can handle plain or fancy weaves, large or small room. Well qualified by long experience and can give satisfaction. Good manager of help, sober and reliable. Address No. 3292.

WANT position as superintendent of 10,000 to 50,000 spindle mill. Have had 20 years experience as a superintendent. Am practical carder and spinner and would accept large card room. Have family. Only reason for wishing to change is that I now handle several mills some distance apart and am away from home more than I like. Good references from past and present employers. Address No. 3293.

WANT position as overseer of carding. Twelve years experience on both white and colored work. Can furnish good references from every mill that ever employed me. Good manager of help, sober and reliable. Address No. 3294.

WANT position as superintendent. Am practical man with many years experience as superintendent and overseer. Now employed and giving satisfaction, but wish larger place. Good references. Address No. 3295.

WANT position as engineer and master mechanic. Am first class man in every respect and good manager of help. Have family of help. Best of references. Address No. 3296.

WANT position as superintendent. Now employed as assistant superintendent, but am competent to hold position of superintendent in large or small mill. Best of references as to experience, ability and character. Address No. 3297.

WANT position as overseer of carding. Now employed in one of the best mills in South Carolina, but have good reasons for making a change. Have had long practical experience on all classes of work. Good, reliable man, know how to manage help, and can get results. Address No. 3298.

WANT position as master mechanic. Long experience in steam plant and machine shop. Am giving satisfaction on present job, but wish to change. Good references. Address No. 3299.

WANT position in mill office as pay roll clerk or similar job. Experienced in mill office work and can give good references. Married. Address No. 3300.

WANT position as overseer of spinning. Competent reliable man who has had long experience in spinning room. Good manager of help. Good habits and can furnish first class references. Now employed. Address No. 3301.

EXPERIENCED bookkeeper, 32 years of age, wants to change positions on or about the first of the year. Thoroughly capable to handle books in mill office. References. Address No. 3302.

WANT position as superintendent, or as assistant superintendent in cloth mill. Have had many years of practical experience as both superintendent and overseer. Good references. Address No. 3303.

WANT position as superintendent, weaver, or designer, in large mill that pays well. Capable of holding large job and handling it in satisfactory manner. Good manager of help. Excellent references. Address No. 3304.

WANT position as superintendent, or overseer of carding, or overseer spinning. Am experienced man of good habits, long practical experience and have ability to get quality and quantity production. Address No. 3305.

WANT position as superintendent or overseer of carding. Now employed, but want better job. Practical man of long experience who can get results. Excellent references. Address No. 3306.

WANT position as overseer of carding. Now have charge of room in good mill

but wish larger job. Over 15 years experience in carding and can get excellent results. Good references. Address No. 3307.

WANT position as superintendent, assistant superintendent, or overseer of carding or spinning. Would consider good office position. My experience covers 20 years in various departments of the mill. Textile graduate, age 35. Address No. 3308.

WANT position as superintendent of weaving mill, white or colored work, where quantity and quality will be appreciated. Age 36. Now employed as carder in large colored goods mill. Over 25 years experience in cotton mill work, 15 years as overseer. Address No. 3309.

WANT position as superintendent of yarn mill, or would take place as overseer of spinning in large mill. Now employed and giving satisfaction. Prefer place in Georgia. Long experience, good references. Address No. 3310.

WANT position as master mechanic; 12 years experience in both steam and electrically driven plants. Now employed. Good references as to character and ability. Address No. 3312.

WANT position as superintendent. Am a competent man, who has had long experience as superintendent and overseer and can handle large or small job in satisfactory manner. Excellent references. Address No. 3313.

WANT position as overseer of spinning in small mill, or would take second hand's place in smaller plant. Now employed. Fine references. Address No. 3314.

WANT position as overseer of weaving. Am experienced on plain and fancy goods and can manage help and produce quality with low percentage of waste. Now employed. Best of references. Address No. 3315.

WANT position as overseer of weaving, plain or fancy work, prefer Draper looms. Have had 18 years experience in weave room, 5 as second hand and assistant overseer. Now have responsible position, but have good reason for wishing to change. References as to ability and character. Address No. 3316.

WANT position as superintendent. Now employed as superintendent of medium size mill on fine combed yarns and am giving entire satisfaction, but want larger job. Married, good habits, fine references covering experience, character and ability. Address No. 3317.

WANT position as superintendent, overseer of weaving, or as salesman of mill supplies. Will be pleased to submit references showing my ability, experience and character. Now employed. Address No. 3318.

WANT position as superintendent of yarn mill, prefer mill on hosiery yarns. Would like place in run down condition to bring it up. Married, age 48, long experience. Good references. Address No. 3319.

WANT position as superintendent of yarn or weave mill on white work. Long experience in a number of good mills and can get results. Fine references. Address No. 3320.

WANT position as overseer of carding, or spinning, or overseer carding and spinning. Am man of long, practical experience, and can get excellent results. Now employed. Good references. Address No. 3322.

WANT position as overseer of carding or spinning, or would take both. Now employed in mill on double carded knitting yarns and am giving satisfaction but wish a larger place. Satisfactory references as to character and ability. Address No. 3323.

WANT position as superintendent of weaving mill, white or colored work, colored preferred. Have successfully filled my present position for the past three years, but have good reason to change. Have had over 20 years' experience in weaving and have ability to handle large or small mill in an efficient manner. References. Address No. 3324.

WANT position as master mechanic. Have handled for a long period, mills on both steam and electric drive and am capable of handling either kind of job. Am giving satisfaction on present job, but wish to change for good reasons. Address No. 3325.

WANT position as superintendent of weaving mill. Especially experienced on print cloths and have handled several print cloth plants very satisfactorily. Would consider place with mill on other goods, as my experience cov-

ers a wide variety of fabrics. References showing character, experience and ability. Address No. 3327.

WANT position as superintendent of small yarn or weaving mill. Now employed as superintendent, but can come on short notice. References as to character and ability. Address No. 3328.

WANT position as overseer of weaving. Have had many years of practical experience on wide variety of fabrics and can give satisfaction. Excellent references. Address No. 3330.

WANT position as overseer of weaving. Fifteen years' experience in weaving, seven years as overseer. Experienced on both plain and Draper looms. Good references. Address No. 3331.

WANT position as superintendent, preferably in colored goods mills; 14 years' experience in mill. Now employed but desire to change. Educated in N. C. Textile School. Age 34; unmarried, but settled. Address No. 3332.

WANT position as overseer of carding and spinning, or both. Thoroughly experienced in both departments. Now employed, but can change on short notice. Good references. Address No. 3333.

WANT position as superintendent. Am experienced overseer of long experience and also owner of patent that can be made very profitable and give the owners a decided advantage if not a monopoly on certain class of goods. Would take stock in mill for same, and also additional stock. Small yarn mill preferred. Am expert carder, young, but settled. Address No. 3334.

WANT position as overseer carding or spinning, or both. Am 33 years of age, seven years as overseer. Good references. Address No. 3335.

WANT position as overseer of spinning. Prefer mill in North Carolina. Can furnish satisfactory references as to past experience, ability and character. Address No. 3336.

WANT position as overseer of weaving, or take place as assistant in large room. Good record over long term of years. Have handled many varieties of fabrics. Satisfactory references. Address No. 3337.

WANT position as overseer of carding. Now employed as second hand, but by experience and ability am capable of handling overseer's job. Good references. Address No. 3338.

WANT position as superintendent of yarn mill on local cotton. Have had 29 years' experience in mill business, number of years as superintendent. Am 50 years old, married and have family of help. Can come at once. References. Address No. 3339.

WANT position as overseer of spinning, spooling or winding. Young married man, age 30. Have been on some of the best jobs in South. Am now general overseer spinning, spooling, twisting and winding. Good reasons for making change. Prefer mill in small town. Address No. 3340.

WANT position as overseer cloth room. Can handle large or small job. Ten years' experience on most all kinds of white goods. Experienced on tire fabrics, and all kinds of goods for rubber trade. Best of references. Address No. 3341.

WANT position as superintendent in weave mill on white work, or would take place as overseer in large weave room. Now employed. Best of references. Address No. 3342.

WANT position as superintendent of yarn mill, or overseer of large spinning room. Practical man of long experience who has always given satisfaction. Excellent references. Address No. 3343.

WANT position as overseer of weaving. Would consider second hand's place on large job. Excellent references as to character and ability. Address No. 3344.

WANT position as overseer of weaving in mill on plain goods. Would not consider place less than \$30 per week. Now employed, but want larger job. Best of references. Address No. 3345.

WANT position as superintendent or would take overseer of carding or spinning. Experienced, reliable and capable, and have excellent references from past and present employers. Address No. 3346.

WANT position as superintendent of yarn or weave mill. Long experience with good mills and can give excellent results. Best of references. Address No. 3347.

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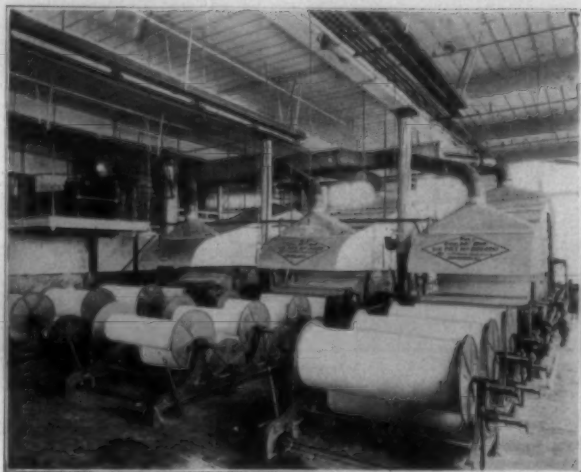
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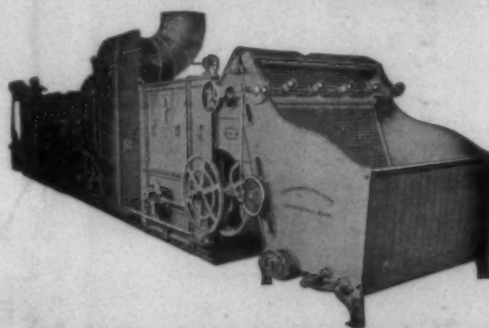
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